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THE GOVERNMENT OF THE PHILIPPINE ISLANDS
DEPARTMENT OF PUBLIC INSTRUCTION
PHILIPPINE HEALTH SERVICE

REPORT OF THE PHILIPPINE HEALTH SERVICE

FOR THE FISCAL YEAR FROM JANUARY 1
TO DECEMBER 31, 1918

J. D. LONG, M. D.,
DIRECTOR OF HEALTH

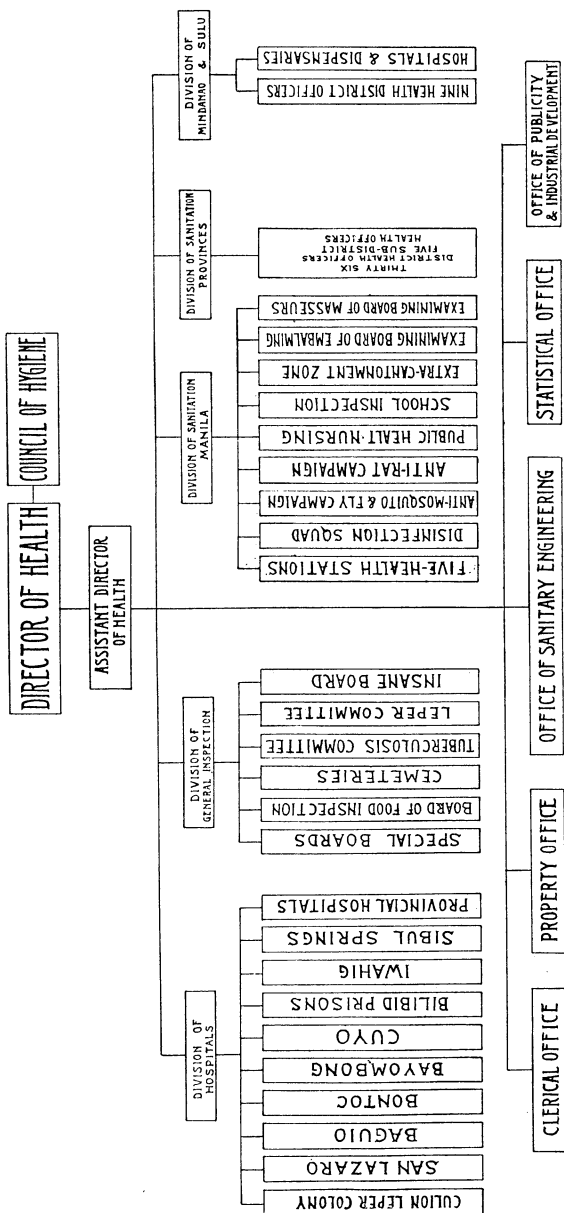
PREPARED UNDER THE DIRECTION OF
VICENTE DE JESUS, M. D.,
ACTING DIRECTOR OF HEALTH

MANILA
BUREAU OF PRINTING
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ANNUAL REPORT OF THE PHILIPPINE HEALTH SERVICE, FISCAL YEAR 1918.

DEPARTMENT OF PUBLIC INSTRUCTION,
PHILIPPINE HEALTH SERVICE,

MANILA, *October 1, 1919.*

SIR: I have the honor to transmit herewith the annual report of the Philippine Health Service for the fiscal year ending December 31, 1918.

THE YEAR IN BRIEF.

While all the usual activities and routinary work of the Service were carried on during the year, it was found possible to effect but few permanent sanitary improvements, as the personnel had to devote most of their time and efforts to combating the epidemics with which the year was fraught. Indeed, the year 1918 turned out as a specially bad year from the standpoint of epidemiology, and never in the history of the Service, excepting perhaps the cholera years of 1902 and 1903, had its resources been so heavily taxed. Yet, disastrous as the epidemiological record of 1918 has been—and in this respect, the rest of the world was not better off, as influenza was distributed evenly in all continents and islands—it will probably serve a good turn in that it clearly brought out in relief such organic deficiencies as needed correction and improvement.

VITAL STATISTICS.

The noteworthy feature of the year from the standpoint of vital statistics was the overdraft caused on the expected annual increment of population by the influenza epidemic, the mortality from which numbered about 85,000 in all. In a minor degree, the epidemic of smallpox and the cholera outbreaks, on the one hand, and on the other, the increased general mortality rate from other diseases, and the deaths from malaria and pulmonary tuberculosis, helped to swell the total number of deaths to the extent of causing a *natural decrement* of 12,921 in the population during the year 1918. The comparative vital statistics for 1917 and 1918 are given below:

Year.	Mortality.		Births.		Fluctuation of population. Increase (+). Decrease (-).
	Total deaths.	Rate per 1,000	Total births.	Rate per 1,000	
1917	213,778	22.32	349,842	20.33	+136,064
1918	349,036	41.73	336,115	29.36	- 12,921

PERSONNEL.

Surgeon John D. Long, U. S. Public Health Service, resigned his position as Director of Health for the Philippine Islands, effective December 31, 1918, the undersigned assuming charge as Acting Director of Health on January 1, 1919.

The commissioned personnel was considerably depleted during the year, through resignations, retirement, death, and the military exigencies of the occasion. The clerical force was likewise sorely handicapped by the lack of men. The provincial organization did not escape a similar experience. The shortage of personnel got to such a point as to threaten the organic frame of the Service, and it was only the splendid spirit of the men who were left and did, in addition to their customary duties, the work of those who had temporarily or permanently gone, that saved the Service from actual disorganization.

Seven commissioned officers and the Director of Health, Dr. John D. Long, resigned during the year. The exigencies of war took two chiefs of office, ten men from the commissioned personnel and six presidents of municipal sanitary divisions from the provincial organizations. In the case of the commissioned personnel, the subtraction of so large a percentage from the total available number caused a serious handicap in routine health work, the more serious because commissioned officers are the men who supervise all work done in connection with the eradicating of communicable diseases.

The depletion of personnel in the higher grades and our failure to fill up gaps in the lower proved to be matters of serious concern. The depletion in the lower grades, subsisting as it does to this date, has become a veritable problem requiring prompt solution. The depletion in the higher ranks was a by-product of the provision of the Salary Law curtailing private practice from officers drawing ₱3,000 or more per year, a provision which, by the way, we would be pleased to see extended and made applicable to all grades, as it is nothing but the legal expression of the full-time system. Others, though, left the Service on account of the exigencies of war. Our failure to fill all the vacancies in the lower grades was due, on one hand, to the

low standard of salaries provided for such positions and which has prevailed in the Service for years, and on the other, because of apparent shortage of men willing to pursue sanitary work as a vocation. While we realize that the financial condition of the country does not admit but expenditures of the most urgent and necessary character, yet in view of the recent developments of sanitary science and administration elsewhere, of the increased expenditures consequent thereto and resulting from the Great War, and of the fact that the interests of public health are of vital import to the country, webbed as they are with the social, industrial and political fabrics of society, it is believed that public health work in the Philippines, if it is to be kept abreast of modern progress, must needs be allowed ample appropriations with which many needed improvements, such as the raising of the salary standard, may be affected. Certain amendments in the Salary Law such as curtailing private practice and allowing better pay in the lower grades of the Service, and providing for other contingencies, would then be in order. The above will undoubtedly result in added efficiency as it will enable us to offer better pay and allurements to likely young physicians who may wish to devote their lives to health work; existing vacancies may be readily filled; the services of competent men may be secured; and the benefits of the full-time system may then be extended to all grades of the Service including the presidents of municipal sanitary divisions.

RESIGNATIONS.

John D. Long.....	Director of Health.
Gilbert I. Cullen.....	Senior Medical Inspector.
Arlington Pond.....	Senior Medical Inspector.
Claude E. Norris.....	Senior Medical Inspector.
Domingo Santos.....	Senior Surgeon.
Andres Bautista.....	Senior Surgeon.
Guillermo Jimenez.....	Surgeon.
José Chavez.....	Surgeon.

RETIREMENT.

Zach M. Laughlin.....	Senior Medical Inspector.
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DEATH.

Paul Clement.....	Chief, Division Provincial sanitation; died June 20, 1918.
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SERVED WITH U. S. ARMY.

Paul Clement.....	Chief, Division Provincial sanitation; died June 20, 1918.
Arlington Pond.....	Senior Medical Inspector.
Almon P. Goff.....	Senior Medical Inspector.
Henry Pick.....	Senior Medical Inspector.

SERVED WITH PHILIPPINE NATIONAL GUARD.

E. L. Barber.....	Sanitary Engineer.
M. J. Walsh.....	Chief, Clerical Force.
Pacifico Laygo.....	Senior Surgeon.
José Raymundo.....	Senior Surgeon.
Enrique F. Ochoa.....	Senior Surgeon.
Benito Panganiban.....	Surgeon.
Manuel Arguelles.....	Surgeon.
Juan Crisologo.....	Assistant Surgeon.
Ramon Santa Ana.....	President, Sanitary Division.
Pedro Buenaseda.....	President, Sanitary Division.
Virgilio Gonzalez.....	President, Sanitary Division.
Rafael Perez.....	President, Sanitary Division.
Gaspar Garcia.....	President, Sanitary Division.
Eliseo Bundoc.....	President, Sanitary Division.

EPIDEMIC DISEASES.

The occurrence of two extensive epidemics—influenza and smallpox—constituted the salient epidemiological features of the year. Almost coincident at the time of appearance, both caused heavy tolls in life, smallpox, throughout the year, while influenza did its worst during the last quarter.

INFLUENZA.

Insidious in its beginning—the first cases believed to have occurred about the end of April, it became recognized as an epidemic during the months of May, June, and July. At this time, however, the disease appeared in mild form, and caused but slight mortality, if any. It was, however, but the forerunner of a second epidemic wave, which beginning to manifest itself about the end of September, developed distinct epidemic tendencies in October and swept over the whole Archipelago from Aparri to Sulu during the rest of the year. The acme of the second epidemic was reached at about the middle of November, the downward curve taking place at the beginning of December. At the close of the year, the disease had lost its epidemic character and was present only as scattered cases in out-of-the-way localities to where the epidemic was belated in coming.

The rate of incidence of the two epidemic waves was about the same, 40 to 45 per cent of the population of the islands being affected. The mortality rate, however, differed greatly, the first causing but few fatalities if any, while the second exacted about 85,000 deaths in all. It was impossible to keep tab of the actual number of cases, but it is believed that the general mortality was about 1.8 per cent. Most of the deaths were due to respiratory, cardiac and renal complications.

SMALLPOX.

Locality.	Cases.	Deaths.	Rate of incidence per 1,000 population.	Average mortality.
				<i>Per cent.</i>
City of Manila.....	1,326	869	4.4	65.3
Provinces.....	33,092	14,092	4.5	39.8
Mindanao.....	12,951	1,486	4.2	11.4
Total.....	47,369	16,447	4.3	38.8

Smallpox was present during the year in epidemic form.

In this connection, it is to be noted that, although smallpox was reported during 1916 and 1917 from the provinces of Samar and Leyte and from Davao, Mindanao, the city of Manila and the rest of the provinces enjoyed immunity from smallpox since the general vaccination of 1905 and 1906. For the last two years, however, a notable increase in cases of varioloid had been noted, and this Service had pointed out that the immunity conferred to the population by the previous general vaccination had begun to wane.

Plans were made to start a general revaccination of the population. As a matter of fact, vaccination was carried rather extensively during 1917 in the city of Manila and in the provinces, particularly in those provinces which were among the first to be vaccinated.

The disease was introduced into Manila, so far as we know, as follows:

The first case of the outbreak occurred in a Moro from Palawan who had been shipwrecked, rescued and brought to the city to be returned to his home island, and was found sick December 16, 1917. On January 1, 1918, his son who accompanied him was also found to be sick and later died on January 10th; the next case occurred on Calle Florida, origin of infection undiscoverable; the next case occurred in an insane person sent from Surigao on January 28, 1918; the following date another case, origin unknown, was also found on Calle Elcano.

The above infections of unknown origin, as well as many others that subsequently occurred, it is believed, came from those provinces and towns, some of them nearby, where smallpox had existed for some time without report of its existence till the disease appeared in Manila, thus making its presence known and causing house-to-house search for cases to be made with the resulting discovery of many hidden and unreported cases.

The smallpox epidemic reached its climax during April, May

and June, and was practically brought under control during July. Since then, only sporadic cases occur in the city of Manila.

The infection in the provinces around Manila and elsewhere developed in concentric lines and followed the highways of commerce, with Manila as a center focus.

The following provinces were infected in the order given below:

February—Rizal.

March—Bataan, Bulacan, Cavite, Laguna, Nueva Ecija, Pangasinan, Tayabas.

April—Batangas, Ambos Ilocos.

May—Mindoro, Nueva Vizcaya, Romblon, Zambales.

June—Antique, Cebu, Capiz, Bohol.

From July to the month of August the epidemic swept over the rest of the provinces. At the end of the year 21 provinces remained infected with smallpox.

In the Department of Mindanao and Sulu, with the exception of the Provinces of Sulu and Bukidnon, all the provinces comprised within the department were invaded by smallpox. In Davao, Lanao and Zamboanga, the epidemic was but a continuation of the 1917 outbreaks. The infection in Misamis and Surigao was traced to Cebu. The infection in Cotabato was traced to Lanao. At the close of the year, the Provinces of Cotabato, Davao, Misamis, Surigao, and Zamboanga remained infected.

A striking feature of the outbreak was the preponderance of children among those attacked. In Manila, 72 per cent of the patients were under 15 years of age and 85.9 per cent were in children of from fifteen days old to and including ten years of age, the remaining 14.6 per cent including all ages from 11 years up. Approximately the same percentages for age groups obtained in the provinces.

The smallpox situation, while grave, was never out of control. Emergency hospitals were established where needed, as rapidly as possible, and they served to reduce the mortality and to retard the spread of the disease. Vaccination was pushed vigorously by all agencies concerned—insular, provincial and municipal, and while it will undoubtedly take some time before the disease entirely disappears, it is certainly declining under the measures taken, and another long period of immunity will be had, followed by small recrudescences until the people generally will have learned by repeated experiences, that complete immunity can only be attained by constant, persistent and repeated general vaccinations of everyone, not only for individual protection but for the protection of the entire community.

OTHER COMMUNICABLE DISEASES.

CHOLERA.

The disease was present throughout the year in sporadic and epidemic forms in Manila and in thirty-one provinces, including six comprised within the Department of Mindanao and Sulu.

While the infection was rather heavy in the Provinces of Bohol, Pangasinan, Cebu, Batangas, and Iloilo, the situation, however, never assumed the proportions of a wide-spread epidemic. In all instances, the outbreaks were promptly brought under control.

The incidence and mortality from the disease during the year was as follows:

	Cases.	Deaths.
City of Manila.....	182	123
Provinces	6,236	4,605
Mindanao and Sulu.....	2,565	1,612
Total	8,983	6,340

The year's outbreaks of cholera were but a continuation of the series of outbreaks which succeeded each other from as far back as August, 1913, when cholera made again its appearance in the islands after an apparent absence of almost two years. From the best information obtainable, there was no known case of cholera anywhere in the Philippine Islands since October, 1911, but since a careful investigation failed to show that the disease was introduced from a foreign country, we are led to believe that the outbreaks during 1913 in Manila and in the Provinces of Bataan, Bulacan, Cavite, Capiz, Cebu, Pampanga, Pangasinan, and Rizal, were of endemic origin.

The cholera problem in the Philippines bears many points of resemblance with the typhoid problem in the United States, in that in either country, either disease has become endemic and has never been eradicated, although always held in check. The typhoid outbreaks in America are of the same general characteristics as those of cholera outbreaks in the Islands, from the standpoint of epidemiology, the factors responsible for their propagation being the following:

- (a) Water, milk and food supply.
- (b) Fomites, or objects contaminated with infective material or excreta from patients.
- (c) Flies.
- (d) Improper sewage or fecal disposal.
- (e) Filthy habits.
- (f) Actual cases.

(g) Carriers, as factors of propagation as well as of explosion.

So far as the outbreaks of cholera during the year are concerned, we considered the cholera carrier as the most important factor concerned in the explosion, transmission and propagation of the disease, and consequently efforts were made for their detection, isolation and treatment. Although a few local outbreaks have assumed fairly large proportions due to secondary contamination of the water and food supplies, the outbreaks were in the main, carrier-borne or spread by contact infection.

Aside from the above factors, responsible for the transmission and propagation of cholera, there were others which played an important part in connection with the outbreaks not in relation with the transmission of the disease, but in that they increased the individual susceptibility to the infection, viz:

(a) Lowered bodily resistance of the general population superimposed by the influenza epidemic, a fact that was borne out by the increased general mortality from other diseases throughout this land.

(b) Errors in diet brought about by the scarcity and high cost of foodstuffs, predisposing the general population to gastrointestinal disorders.

(c) Last, but not least, the fact that the volume of traveling and intermigration between islands, between provinces, and between the city of Manila and outlying localities have considerably increased during the last few years due to increased transportation facilities. There is therefore an endless intermingling of people from infected to noninfected places and an incessant flow of cholera carriers from one end to the other end of the islands.

In passing, it is to be stated that the total eradication of cholera from these islands is a possibility for the future but not for the present. Our means and ways for combating the disease have been brought, however, to a point where extensive epidemics may be precluded and local outbreaks or "flare-ups" are speedily brought under control. Under the circumstances, our ideal in cholera work is abridged under two heads:

(a) Control of outbreaks.

(b) Reduction of incidence of infection to the minimum.

TYPHOID FEVER.

A total of 3,817 deaths, as against 2,144 registered during 1917, were reported from the provinces. The incidence rate in the provinces registered an increase of 79.46 per cent over that of last year. The record in the city of Manila was, how-

ever, better. A total of 497 cases and 118 deaths were reported for the year as against 525 cases and 199 deaths for the year 1917. There was also a decrease in the mortality rate, 1918 registering 23.74 per cent mortality against 37.9 for 1917. The improvement of the typhoid situation in Manila was traceable to thorough and accurate reporting of the cases, which, of course, brought about a far more satisfactory disposal of the ill—better home isolation, if not hospitalization of the cases, continuous concurrent disinfection of the patient's discharges and other precautions as regard food and drink, and the prevention of contact infection.

DYSENTERY.

The total number of deaths reported from the provinces was 8,973 as against 7,092 in 1916 and 7,496 in 1917. In the city of Manila, a slight decrease from the record of 1917 was noted, 839 cases and 218 deaths for 1918 as against 851 cases and 294 deaths for 1917. The same explanation given for typhoid fever may be offered in this connection, the two diseases being water-borne and of similar epidemiological character.

DIPHTHERIA.

Seventy suspected cases were reported in the city of Manila. Of these, two cases and one death were found clinically and bacteriologically positive. Forty-three cases and fourteen deaths were found clinically positive, so a total of 45 cases and 15 deaths were found positive, from the clinical standpoint.

As in the case of last year, two epidemiological points in connection with diphtheria outbreak in Manila remain as yet unsolved, viz:

(1) The high mortality obtaining both in positive and negative cases, even with the administration of curative doses of diphtheria antitoxin.

(2) The participation of other non-specific factors in the causation of the disease.

No cases reported from the provinces.

TUBERCULOSIS.

Tuberculosis is increasing every year. During 1918, the disease caused more deaths than cholera, dysentery and typhoid put together. A comparative statement of deaths in the provinces from tuberculosis during the last three years is given below:

1916	17,411
1917	17,882
1918	20,498

An increase of 14 per cent was therefore recorded for 1918 over 1917.

MALARIA.

With tuberculosis, malaria shares credit for the largest number of deaths caused. As in the case of tuberculosis the incidence and mortality rates are increasing year after year, as may be seen on the following statement of deaths for the last three years:

1916	25,862
1917	28,697
1918	43,520

PLAGUE.

No case of either human or rat plague registered during 1918 anywhere in the Philippines. The last known case of human plague in the islands occurred September 12, 1914, and the last case of rat plague was found in 1916, the same being of chronic avirulent type.

SANITATION IN THE CITY OF MANILA.

The routine work of the division was carried on with the same dispatch and thoroughness of former years. However, the influenza and smallpox epidemics and the cholera outbreak gave the personnel particularly heavy work. All responded eagerly to the needs of the occasion and there was every reason for commending their splendid behavior.

The following were the noteworthy epidemiological features of the year:

- (1) The occurrence of the influenza and smallpox epidemics.
- (2) The increase noted in the general mortality as a consequence of the influenza epidemic.

(3) Certain peculiarities noted in the cholera outbreak of October and November, such as a mortality percentage higher than that noted in previous outbreaks; a large percentage of clinically positive cases but found "negative" bacteriologically; and failure to note an increase in the number of carriers prior to the appearance of cholera contrary to what has been observed in previous outbreaks, said departure from the ordinary known course of cholera believed to have been influenced by the grippe epidemic.

SANITATION IN THE PROVINCES.

The greater portion of the activities of the provincial health organizations had to be assigned perforce to eradication work in connection with the smallpox and influenza epidemics, and

the cholera outbreaks which were rather numerous during the year. On the above account, it was found impossible to undertake sanitary improvements of permanent character nor was it humanely possible as a consequence thereof to effect anything more than mere routine and communicable disease eradication work.

The matter of efficiency of the medical personnel on half-time schedule has been put to acid test during the various epidemics, and to be candid, in most instances, the services of such officers have been found wanting. The matter has reached a point where it becomes necessary to do away with the old system, if the Service is to have efficient men in the provinces. Full-time officers became the cry of the year as it has been from years back. The old system of half-time men is faulty in that it rests upon a false basis of service. A physician is either a sanitarian or a practicing man. He cannot be both at the same time. That, and the fact that a half-time medical officer is poorly paid accounts for the deficient services rendered. It would appear then as though the time has come for extending the full-time system to presidents of municipal sanitary divisions and to allow them better pay, so that there would be no need for them to do private practice. Such a course would seem to be about the very best we could do to insure the efficiency of our provincial health organizations.

SANITATION IN MINDANAO AND SULU.

All the provinces included within the Division have been organized into sanitary divisions. The general provisions of the Public Health Law have been made applicable to all the provinces of the Department. Surigao was the last to be organized into sanitary divisions.

The sanitary divisions have all been provided with qualified physicians. For the first time in their history, the towns along the Pacific coast, where the people have never before seen physicians, are now receiving the benefits of a health organization.

During the year the number of closets of the Antipolo sewage system increased to 1,000 per cent. The number of dispensaries in operation at the end of the year remained equal to the number during 1917. At Zamboanga, a new general hospital and a hospital for contagious diseases were inaugurated during the year.

HOSPITALS.

At the close of the year, a total of seventeen hospitals were in operation under the control of this Service, two of which are located at Manila, and the others in the following towns and

cities: Albay, Baguio, Bayambong, Bontoc, Butuan, Cotabato, Cuyo, Dapitan, Iwahig, Jolo, Kiangnan, Lanao, Naga, Tacloban, and Zamboanga. Totals of attendance, treatments and deaths in these hospitals, Bilibid and San Lazaro and the Culion Leper Colony excepted, are given below:

Total number of patients on hand, January 1, 1918.....	125
Total number of patients admitted during 1918.....	7,573
Total number of patients treated during 1918.....	7,698
Total deaths.....	264
Mortality rate.....	per cent. 3.41

SANITATION BILIBID PRISON.

The chief causes of mortality among the prisoners at Bilibid were pulmonary tuberculosis, intestinal parasites, amoebiasis, venereal diseases among the new arrivals, contagious eye diseases, grippe and respiratory diseases.

In a total of 16,476 stool examinations performed during the year in connection with the intestinal parasites survey, 4,634 were found positive for intestinal parasites distributed as follows:

Ascaris lumbricoides.....	2,409
Hookworm	1,636
Amoeba coli.....	558
Amoeba histolytica.....	21
Taenias	10

The proportion of the prison population found infected with parasites was 29.94 per cent, or a little less than one-third. Of those found harboring parasites, 51.96 per cent, or a little over one-half were found infested with round worms, 35.30 per cent afflicted with hookworm, 12.04 per cent with amoeba coli, 0.4 per cent with amoeba histolytica and 0.21 per cent with taenia.

Bilibid Prison was free from cholera during the entire year. Out of 91,999 cultures taken and sent to the Bureau of Science for examination only one man was found to be a positive cholera carrier. This comparative immunity of the institution from cholera infection was due to the stringent measures taken by the prison officials to prevent the entrance of infection from outside, and to the strictly hygienic way in which the prisoners were fed.

Twelve cases of beriberi were treated during the year, most of these cases having occurred amongst new comers or prisoners working outside and in the provinces. The use of unpolished rice has greatly diminished the incidence of this disease in Bilibid Prison during the past few years.

During the influenza epidemic of October and November, almost all of the inmates of the prison fell victims to the disease,

and of those in whom respiratory complications developed, nearly half died. Among the 2,674 cases of this disease treated during the year, 71 cases of lobar pneumonia complications occurred with 31 deaths.

As in the case of the previous year, tuberculosis continues to hold first place in the morbidity and mortality among prisoners. Out of 179 cases treated during the year, 108 or 65.95 per cent died. The transfer of tuberculosis patients to Iwahig Penal Colony, or elsewhere would improve the health of such patients and prevent the spread of infection inside Bilibid Prison.

As a result of the influenza epidemic, the general death rate and the death rate from tuberculosis showed marked increase as compared with the rates of previous years.

In the annual general medical survey of the prison, 2,633 prisoners, including females, were examined physically and microscopically, and the results of the examination was as follows:

Skin diseases.....	876
Eye diseases.....	147
Mouth and tooth diseases.....	334
Hemorrhoids	59
Hydrocele	19
Hernia	15
Fistule Ani.....	5
Lipome	32
Varicocele	19
Varicose veins.....	16
Cataract	3
Phymosis (congenital).....	4
Harelip	1

Incidentally, 39.08 per cent of the prisoners so examined were found infested by intestinal parasites, a higher percentage than the one given at the beginning of this article.

The general death rate for the year was 21.10 per 1,000, figured on an average prison population of 6,926; of which 10.40 represent deaths due to non-tubercular cases, and 10.70 represent those due to pulmonary tuberculosis. Of the total 146 deaths occurring during the year, 137 were Filipinos, 8 Chinese and 1 American.

The comparative immunity of Bilibid from cholera infection and the very small number of cases of beriberi registered during the year, most of which were traceable from outside at that, are convincing proofs of what iron-handed sanitation can accomplish in a given group of individuals. Our experience in sanitation work at Bilibid Prison is a standing lesson of tropical

sanitation; even our failures there serve as valuable pointers for future guidance in health administration.

SAN LAZARO HOSPITAL.

This institution is of all the hospitals in the islands, the only one exclusively reserved for the care, isolation and treatment of dangerous communicable diseases. Although, it ranks as being one of the largest and most important institutions in the country, yet its capacity was found by far insufficient to accommodate the patients who were transferred there during the cholera, small-pox and influenza epidemics.

A total of 4,803 admissions were registered during the year, of which 401 were cholera patients, 1,079 smallpox, 860 varioloid. 460 measles, 650 tuberculosis, 302 leprosy, 326 insanity, 169 dysentery and 162 mumps. The balance were admissions for other communicable diseases. Of those brought to the hospital for treatment, 1,180 had fatal termination, a little less than one-half of whom died from smallpox.

With regard to permanent structural improvements needed in this hospital, and there are many recommended for 1919, the reader is referred to the Report of the Division of General Inspection and Hospitals dealing on San Lazaro Hospital.

CULION LEPER COLONY.

The following permanent improvements were effected in the colony during the year:

- (a) The construction of a protestant chapel. A modified "model-house" style of architecture.
- (b) The completion of the Culion Leper Club house. Building is also of "model-house" style.
- (c) The Leper School-house to replace the one condemned and torn down sometime ago, was started in March and now completed. Also of "model-house" style and with capacity for 500 students.
- (d) The new Imhoff tank which was started last year and now completed, but as yet unused.
- (e) Construction of the sanitary barrio continued during the year.
- (f) Construction of a medicated bath house. Building of "model-house" style with capacity for six bathers.
- (g) Electric Light Plant. The Culion Fish and Ice Company incorporated itself as the Culion Ice, Fish and Electric Company and installed an electric plant which supplies excellent lights to both the Colony and Balala.

At Balala, the non-leper section, permanent improvements were also effected, viz.:

(a) *The Chief's House*.—Erection started in 1917 was completed and occupied in April, 1918. Building is of modified "model-house" plan.

(b) *Clerk's quarters*.—A new double house of the "model-house" plan has been erected providing ample accommodations for two families.

(c) *Dock bodega*.—A temporary structure has been erected, made of first group timbers with galvanized iron roof.

(d) A new launch, thirty feet, "V-bottom," all lanete, was constructed early in the year and fitted with a new 25 horse power Ferro engine. The launch has proved very seaworthy.

CLERICAL WORK.

The work of the Clerical Office has been particularly heavy during 1918. The daily average of pieces of mail handled had increased to an enormous extent, and a serious shortage in the personnel was experienced throughout the year, more acutely so during the second semester, when the chief of office had to be absent himself undergoing military training with the Philippine National Guard. As a whole, though, the available personnel performed their tasks satisfactorily despite shortage of numbers and consequent doubling up of work.

PUBLIC HEALTH NURSING.

Work by public health nurses in Manila has been in the main along educational lines, and in connection with child welfare, medical relief and general hygiene and sanitation. The plan was to visit each house in a given district and treat the simple cases, referring the more serious ones to hospitals and clinics. Talks were given in each house on sanitation, housekeeping and balanced diet, expectant mothers were advised and instruction given in the care of babies. Emphasis was given to the subject wherein education was apparently most needed in the household. The family was also instructed in the care of the sick and in the prophylaxis against infectious diseases. The work in the provinces has been done in accordance with the same plan. Practical demonstrations of public health nursing work were given to the nurses of the hospitals at Baguio, Bontoc, Kiangnan and Bayombong and instructions to the people in the villages along the trail between these towns. The office has also coöperated with the sanitary surveys in Cebu and Bulacan Provinces and with the sanitary work in the extra cantonment zone around

Camp Claudio. A tabular report of the activities of public health nurses is given below:

Localities.	First visits.	Follow-up visits.	Treatments.	Referred to clinics.	School children.		Female shop-keepers examined and instructed.
					Examined.	Treated.	
Manila	4,936	4,856	5,715	94			
Provinces	2,349	547	1,076		586	768	265
Total	7,285	5,403	6,791	94	586	768	265

AUTOMATIC HEALTH CONTROL.

In the annual report for 1917, it was intimated that "a future benefit (of sanitary commissions) of far-reaching importance will be the installation of a system of health organization in sanitary divisions which for want of a better name, has been tentatively designated the automatic health organization." This system consists, briefly, in a series of maps, curves and charts, card indexes and cross indexes, based upon data which have been obtained through the work of the Sanitary Commissions, and which will be installed in each sanitary division as rapidly as may be possible. Once this type of organization is established, it will be possible for the health officer to know at once what particular factor is bringing about an increase in morbidity and mortality and it will indicate with a reasonable degree of exactness the probable origin of the infection which is producing the morbidity and mortality. A little further and more detailed investigation will then enable the health officer to locate the cause with certainty.

The system has been actually tried during the year in the Provinces of Cebu and Bulacan. The results have far surpassed our expectations as to the practical benefits to be derived from the system, and it is planned to extend same to every province beginning January 1, 1920.

A bulletin on the subject of automatic health control has been prepared by Dr. L. R. Thompson, Passed Assistant Surgeon, U. S. Public Health Service, under the direction of the Director of Health. Dr. Thompson, by the way, is the man who conceived the idea that finally resulted in automatic health control.

EXTRA CANTONMENT ZONE WORK IN AND AROUND CAMP CLAUDIO.

Upon the mobilization of the Philippine National Guard at Camp Claudio, Rizal Province, His Excellency, the Governor-General promulgated Executive Order No. 38, with a view to

protecting said organization against dangerous communicable diseases. Under the provisions of this order, the Secretary of Public Instruction approved a set of sanitary regulations submitted by the Philippine Health Service to cover the following subjects:

1. Short title of regulations and administrative jurisdiction.
2. Ordinance providing for the prevention of dangerous communicable diseases.
3. Ordinance providing for adequate reporting of health statistics.
4. Ordinance providing for the maintenance of school sanitation.
5. Ordinance providing for the supervision of sanitary maintenance of premises.
6. Ordinance providing for the abatement of nuisances.
7. Ordinance making members of police department sanitary inspectors for abatement of nuisances.
8. Ordinance providing for the disposition of human wastes.
9. Ordinance providing for the care and disposal of manure.
10. Ordinance providing for the disposition of garbage, refuse and ashes.
11. Ordinance providing for the prevention of mosquito breeding.
12. Ordinance providing for the protection of the domestic and drinking water supplies.
13. Ordinance governing the sale of food and drink.
14. Ordinance providing for the sanitary regulation of barber shops and hair dressing establishments.
15. Ordinance providing for the prevention of venereal diseases.
16. Ordinance requiring the muzzling of dogs.

Through the provisions of the above regulations the Philippine Health Service created, under date of November 4, 1918, an extra cantonment zone within a circle the radius of which was seven miles from Camp Claudio. The district was placed in charge of Senior Surgeon Felino Simpao, and included the towns listed below: Pasay, Parañaque, Las Piñas, Muntinlupa, San Pedro Makati, San Juan del Monte, San Felipe Neri, Pasig, Pateros, and Tagig in Rizal province; Bacoar and Imus in Cavite.

The zone included a population estimated to be 107,914.

Sixty-four artesian wells are scattered in the district. The average number of population using this source of water supply is 1,686 per each well. Despite the above, only 91 cases and 62 deaths due to water-borne diseases were registered. It is be-

lieved that the rigid inspection of shops where food was sold has been instrumental in bringing the incidence and morbidity from such diseases to low figures.

Six thousand sixty-seven cases and 935 deaths from communicable diseases were registered, most of which were due to influenza, the towns of Imus, Pasig and Parañaque being the greatest sufferers thereof. The municipality of Tagig registered 77 cases and 46 deaths from smallpox.

To the end that the above morbid causes may be checked and the National Guard cantonment rendered free from contagious diseases, the extra cantonment health service effected activities along the lines listed below:

(a) Lectures on preventive measures against dangerous communicable diseases.

(b) Influenza campaign. Treatment of cases found and reported by sanitary inspectors and distribution of medicines.

(c) Distribution of anti-influenza bulletins.

(d) Inspection of 21,360 houses and sanitary orders issued for general cleaning.

(e) Weekly inspection of public schools and monthly physical examination of school children.

(f) Sanitation of populated centers especially those lying around Camp Claudio.

(g) Disinfection of houses where cases of dangerous diseases have been registered.

(h) Disinfection of 40 surface wells.

(i) Partial vaccination.

(j) Construction of six public midden sheds.

(k) Construction of 1,956 closets of the Antipolo system.

(l) Sanitation of 486 stables and providing of same with absorbent tanks.

(m) Inspection of *all tiendas*, 440 of which were placed in sanitary condition.

(n) Sanitary supervision of establishments for the sale of candy and ice cream.

(o) Poisoning of 307 stray dogs.

(q) Statistical work in the municipalities of Pasay, Parañaque, Las Piñas, Bacoar, and Imus for automatic sanitary control.

NEW DEVELOPMENTS IN SANITARY SCIENCE.

CAMPAIGN FOR BALANCED DIET AND HEALTHIER HOMES.

Public health is in a state of change. New developments are continuously taking place, and as consequence of such changes,

a revision of our old views is made necessary. The fundamental change from the old consists in a shift of attention from the inanimate surroundings of man to the man himself. Previous generations of public health propagandists had been so intent on the importance to the individual of his health that they quite overlooked the immense importance in arriving at the climax—health—of those factors involved in the individual: his make-up, his vigor, his alertness, his enterprise, his physical adaptability; his faculty for meeting adverse conditions leading to disease.

So far as the application of these new views in the Philippines is concerned, the shift would appear indicated, primarily toward conservation of and caring for the individual's resistance to disease, and secondarily toward securing healthful surroundings for the individual.

Dr. John D. Long, during his tenure of office as Director of Health for the Philippine Islands, pointed out the way leading to the above objective points. His efforts to secure a better diet and healthier home surroundings for the average Filipino are now not only a matter of record, but of actual realization. The idea thus sown has spread, and the results of the hygienic campaign for securing a balanced diet undertaken during the year with the coöperation of the women's clubs have in the whole been satisfactory, as evidenced by the number of the vegetable gardens established, the improved standard of living observed among those who have been reached by our efforts and the general improvement of the family, social and economic standards of these same people. There is, however, a great deal yet to be done in this regard, as the bulk of the masses have yet to be reached. There is also the natural inertia of long-established customs to be met, the hardest stumbling block perhaps with which we will have to contend with in this regard.

The problem of housing—the individual's surroundings—has been also a subject of our attention, alongside of such side features of the home as sanitary sewage disposal, domestic hygiene, sanitation of yards and premises, water supply, etc. There has been a fairly general acceptance and adaptation of the Service's sanitary-house plan. The work is vast, though, and involves social and economic problems, without proper solution of which we can secure at best but mediocre results. But the way has been blazed, and with "better food and healthier homes" as a slogan, this Service is hopeful of fully meeting these later developments of modern sanitary science in the years to come.

SUMMARY OF WORK IN 1918.

A. SANITARY WORK IN THE PROVINCES.

(a) The automatic health control system has been actually tried in two provinces and practical results obtained far surpassed expectations.

(b) Six additional provinces—La Union, Mindoro, Nueva Ecija, Pangasinan, Rizal, and Sorsogon—organized into sanitary divisions.

(c) One hundred sixty-five new dispensaries established, making a total of 562 in operation at close of year, serving over 380,000 people.

(d) A new general hospital and a new contagious hospital opened in Zamboanga.

(e) Work done in public health nursing consisted of attendance to 224 abortion cases, 2,845 normal deliveries, 157 dystocias, and 732 post partum cases. Feeding of 5,767 babies under 2 years supervised; 1,158 public and 9,289 private lectures were given.

(f) Thirty-eight thousand four hundred fifty-four closets of the Antipolo sewage system installed.

(g) Three hundred sixty-one artesian wells drilled; 2,706 sanitary surface wells dug; 9 gravity systems installed. These and those already in operation at beginning of year provide water for 37 per cent of the population.

(h) Sixty-three markets built.

B. SPECIAL SANITARY AND HYGIENE ACTIVITIES.

(a) Education and publicity, as promoted by a biweekly bulletin distributed to all parts of the Islands, and printed in the daily papers. Also pamphlets and exhibitions, lectures and moving pictures work. Attendance to lectures 267,644 persons.

(b) Improvement of structural specifications of the average Filipino home. Much interest has been stimulated in this movement and there has been fairly general acceptance and adaptation of the Service sanitary-house plans.

(c) The foundation of 167 new women's clubs, making 233 in all. This is the most effective measure yet evolved in reducing infant mortality, correcting prevalent dietary errors, improving domestic hygiene, and in generally improving the family, social, and economic standards.

(d) Social service and sick-visiting work by public health nurses. The frequent calls of these nurses are a great stimulant to higher living standards.

(e) Gradual reformation of the poorly balanced national diet.

(f) Country-wide installation of Antipolo closets, and potable water supplies. Conditions are still far from satisfactory in this regard as evidenced by sporadic and endemic outbreak of filth and water-borne diseases.

(g) Extra Cantonment Zone sanitary work in and around Camp Claudio. The work done in the zone was instrumental in safeguarding the lives of the officers and men of the Philippine National Guard Division held in training at Camp Claudio from dangerous communicable diseases, such as cholera, typhoid and smallpox.

C. EPIDEMIOLOGY.

(a) Cholera has been kept under control, though sporadic outbreaks and small-sized epidemics were prevalent. Incessant watchfulness and prompt energetic work were constantly required.

(b) Seasonal incidence of dysentery decreasing progressively, due largely to improved water supply and sewage facilities.

(c) Plague not present.

(d) Smallpox, although widely prevalent and epidemic, has been held in control. A total of 3,285,376 vaccinations were performed, with 63.22 per cent positives.

(e) Influenza occurred in two epidemic waves. The first, during May, June, and July, characterized by slight mortality; the second, during latter part of September and throughout October, November, and December, and attended with high mortality percentage through respiratory, cardiac and renal complications. All known and approved sanitary measures failed to check the spread of the disease, which finally died out when fresh victims were no longer available.

(f) Malaria still prevalent, and heading with tuberculosis list of diseases causing most deaths.

(g) Rabies has been controlled.

(h) Diphtheria has been materially curtailed.

(i) Routine fly, rat, and mosquito extermination work has been kept up in collaboration with the above epidemiological efforts.

D. VARIOUS WORK.

(a) School inspection has been developed to the utmost latitude compatible with present appropriation. A total of 1,418 were inspected and 186,233 pupils examined. Disposal of excreta in school has been likewise inspected, and where nuisances were observed, they were immediately caused to be corrected.

(b) Confidence of people and coöperation of local practitioners materially increased, both through results and through publicity work.

(c) Substantial construction work at Culion and San Lazaro Hospital and elsewhere carried out.

(d) Great interest and advancement in sanitary work has been noticeable among the non-Christian people. The Pacific Coast of Mindanao has been given, for the first time in history, the benefits of a health organization.

V. DE JESUS,
Acting Director of Health.

The Honorable,
The SECRETARY OF PUBLIC INSTRUCTION,
Manila.

REPORT OF THE DIVISIONS OF GENERAL INSPECTION AND HOSPITALS.

[Assistant Director of Health VICENTE DE JESUS, *in charge*.]

DIVISION OF GENERAL INSPECTION.

COUNCIL OF HYGIENE.

The Council of Hygiene held 3 ordinary and 11 extraordinary sessions during the year. The work accomplished by the Council was as follows:

At the regular sessions the following subjects were treated: Discussion of the treatment and cure of leprosy as employed at the Culion Leper Colony, especially with reference to the Mercado treatment, and a comparison of the results obtained. Discussion of the cause of the increased mortality in the city of Manila and its reduction; namely, (a) by relieving the congestion of Manila's populace, (b) by extending the city limits of the city of Manila, (c) by the urbanization of the suburbs, (d) and by the establishment of sanitary barrios for the laborers. Discussion of the control and eradication of smallpox in the city of Manila and in the provinces. Discussion of the revision of the laws and regulations governing the practice of optometry. The drafting of laws and regulations governing bacteriologists, pathologists, and the equipment of laboratories.

In the extraordinary sessions the following subjects were considered. The proposed amendment of Act 2468 and the repeal of Act 2510 were discussed and returned to the author of the amendment with an amendment to the amendment and recommendation. The Bill creating the Pharmacy Inspection Board was reconsidered and returned to the Secretary of Public Instruction with a statement of the reasons and motives upon which the proposed bill and amendment were based. The examination questions for entrance to and promotions of officers in the Philippine Health Service were prepared. The out-houses for contagious diseases at San Lazaro Hospital were inspected with a view to suggesting improvements and, in view of the insufficient space for the proper isolation of cases of smallpox during the recent smallpox epidemic, to consider the advisability of building additional out-houses; also to consider the advisability of the installation of a laboratory at San Lazaro Hospital in order to avoid the delay involved in the present practice of sending specimens to the Bureau of Science for examination.

Consideration and discussion of bottled mineral-medicinal waters. The study and revision of laws governing the practice of medicine, the professions of midwifery and nursing, and the drafting of laws governing child labor.

The labors of the Council have been of inestimable value in making suggestions, amendments, and recommendations to be incorporated into law, and as a guide in matters pertaining to the Health Service and its allied branches from a hygienic, sanitary, and legal point of view.

FOOD AND DRUG INSPECTION.

The Board of Food and Drug Inspection held semimonthly meetings to pass upon questions arising in connection with the enforcement of the Food and Drugs Act and to receive protests against any action taken in its administration, in so far as this Act refers to foods. The Board performed the same function with respect to drugs and medicines in connection with the Food and Drugs Act and the Proprietary Medicine Act until February 28, when by Act No. 2762 control over drugs and medicines was vested in the Board of Pharmaceutical Examiners and Inspectors.

Of importations of foods of which samples were submitted to the Bureau of Science, 87 were admitted without change of label, 31 were admitted upon amendment of label, 16 were rejected, and 1 shipment of alcohol found to contain methyl alcohol was admitted upon denaturing so that it could not be used in food products. The reasons for relabeling and for rejection were as follows:

RELABELING.

Short weight.....	6
Lack of English label.....	6
Misbranded as to name of product.....	2
Net weight not stated or illegible.....	13
Kind of preservative in canned sardines not stated.....	2
Sweetened condensed milk labeled "Condensed Milk" (1 also short weight)	2
Total	31

REJECTION.

Illicium religiosum (importation prohibited).....	5
Contained copper.....	4
Canned goods containing an excessive amount of sirup.....	2
Baking powder, less than 12 per cent available carbon dioxide.....	1
Contained excessive amount of sulphuric acid.....	3
Contained boric acid.....	1
Total	16

In addition, samples were collected by the food and drug inspector and analyzed by the Bureau of Science as follows:

Milk	61
Foods	304
Drugs	14
Food colors.....	2
Beverages	151
<hr/>	
Total	532

Also numerous samples from the provinces were submitted by the district health officers.

The following food products were condemned:

Cheese	cans....	4,157
Sardines	do.....	3,043
Salmon	do.....	127,536
Greyfish	cases....	100
Wheat flour.....	tons....	3
Spaghetti	cans....	1,824

The following administrative decisions under the Food and Drugs Act were issued:

No. 165-*a*.—Defining and fixing standards for plain chocolate; sweetened chocolate; and sweetened chocolate with peanut, first, second, and third class.

No. 172.—Defining and fixing standards for condiments other than vinegars and salt.

No. 173.—Defining and fixing standards for canned vegetables, canned peas, and canned pea grades.

No. 174.—Defining and fixing standard for baking powder.

No. 174-*a*.—Defining and fixing standard for carabao's milk.

No. 174-*b*.—Defining and fixing standards for *bagoong* and *patis*.

No. 175.—Adding four yellow shades to the list of permitted coal-tar dyes.

No. 176.—Defining and fixing standard for evaporated apples.

No. 177.—Defining and fixing standards for soda water flavors and soda, soda water.

Seven proposed trade-marks for food or drug products were submitted, of which 3 were found to meet the requirements of law and 4 required amendment. These were passed upon by the Board in accordance with an agreement entered into in December, 1913, with the chief of the division of archives, patents, copyrights and trademarks, then a branch of the Executive Bureau, as it had occurred on several occasions that labels to which copyright had been secured were, when applied to the food products for which they were intended, in violation of the Food and Drugs Act and their use prohibited. It was therefore believed, as a matter of interbureau coöperation both to save needless expense for the manufacturer or dealer and to secure

more efficient enforcement of the Food and Drugs Act, that such labels should be passed upon by the Board before the issuance of copyrights. However, since the division charged with the issuance of copyrights was annexed to the Bureau of Commerce and Industry the latter has decided that this practice occasioned unnecessary loss of time and has discontinued it.

Fines were imposed by the court for violations of the Food and Drugs Act as follows:

Chili sauce, colored with a nonpermitted coal-tar dye, short measure, packed in bottle with name of another manufacturer blown in the glass	₱30
Chocolate, adulterated with peanut.....	100
Vinegar, 2.5 per cent acetic acid (standard 4 per cent labeled "3 per cent," quantity not stated.....	20
Table sauce, contained benzoic acid, quantity of contents of bottle not stated	100
Dog meat sold for goat meat.....	25
Total	₱275

Also four fines, totaling ₱35, were imposed under the ordinances of the city of Manila for selling adulterated or dirty milk.

Through the efforts of the board and of the food and drug inspector all dairies selling milk in Manila have installed pasteurizing apparatus of a cheap but efficient type design by the food and drug inspector. All milk coming from dairies is now produced and handled in a sanitary manner. Carabao's milk sold in Manila and in the provinces is often watered. An effort is being made to put and end to this practice.

The matter of nipa vinegar from Bulacan and Pampanga Provinces sold in Manila, deficient in acetic acid, was taken up and instructions as to the proper method of production were distributed to the various producers.

PROVINCIAL CEMETERIES.

In spite of the heavy campaign work imposed upon the medical officers of this Service by the frequent outbreak of epidemics in most of the provinces throughout the entire year the activity and improvement of the preceding year of this branch of the Service continued during the year 1918. Thirty-one cemeteries were reported as being in an insanitary condition, 2 of which were closed, the remaining 29 cemeteries undergoing repairs and improvements at the end of the year, the work being greatly retarded on account of epidemical outbreaks.

The following table shows the various activities during the year 1918 as compared with the previous year:

	1917	1918
New cemeteries approved	75	80
Old cemeteries approved	33	13
Old cemeteries reopened	21	25
Total	129	118
Old cemeteries closed	45	25
Extensions of time granted	73	39
Enlargements approved	13	6
Proposed new cemeteries disapproved	7	1
Cemeteries reported as being insanitary	67	31
Cemeteries reported as being sanitary	98	50

DIVISION OF HOSPITALS.

This division includes the following hospitals:

INSULAR.

San Lazaro Hospital, Manila.
 Bilibid Hospital, Manila.
 Baguio Hospital, Mountain Province.
 Bontoc Hospital, Mountain Province.
 Kiangnan Hospital, Mountain Province.
 Cuyo Hospital, Palawan.
 Iwahig Penal Colony Hospital, Palawan.
 Bayombong Hospital, Nueva Vizcaya.

MINDANAO AND SULU.

Sulu Public Hospital.
 Lanao Public Hospital.
 Cotabato Public Hospital.
 Zamboanga Public Hospital.
 Rizal Memorial Hospital.
 Butuan Hospital.

PROVINCIAL.

Albay, Albay.
 Naga, Ambos Camarines.
 Tacloban, Leyte.

BAGUIO HOSPITAL.

The work accomplished during the year may be summarized as follows:

There were cases of *trancazo* during the month of November and the early part of December, and as the hospital could not provide sufficient accommodations for all the patients, the Bureau of Public Works and the city of Baguio had to provide provisional hospitals for their laborers; also the agricultural school at La Trinidad had to utilize one of its buildings as a temporary hospital for its students, mostly Igorots. Ninety per cent of the cases treated in and outside of the hospital recovered, the deaths being largely due to complications.

The hospital personnel has been very efficient and the results of the year's work have been very satisfactory in every respect.

The prices of goods purchased for the hospital were almost double those of the previous year and the expenses could not be kept below 95 centavos daily per capita.

General repairs are being made to the main hospital building, and a new cottage for contagious cases is planned to replace the present tents.

Much of the furniture in the hospital is unserviceable and should be replaced.

MISCELLANEOUS SUMMARY.

Patients remaining over from previous year.....	16
Patients admitted during the year.....	856
Hospital cases treated during the year.....	872
Patients remaining in hospital December 31st.....	18
Persons accompanying patients in hospital.....	134
Patients who visited the hospital clinic.....	8,019
Patients who attended the hospital clinic.....	5,003
Surgical dressings.....	2,915
Prescriptions filled.....	5,124
Laboratory examinations made.....	333
Major operations performed.....	11
Minor operations performed.....	222
Prostitutes examined.....	41
Chauffeurs examined.....	35
Officers and enlisted men of National Guard examined.....	100
Americans treated in hospital.....	51
Filipinos treated in hospital.....	739
Europeans treated in hospital.....	35
Japanese treated in hospital.....	12
Chinese treated in hospital.....	19
Male patients treated in hospital.....	560
Female patients treated in hospital.....	312
Deaths in hospital during the year.....	44

BAYOMBONG HOSPITAL.

While the building in which this hospital is housed is inadequate for a hospital, nevertheless the hospital has been a very great blessing and comfort to those who came in for treatment. During the year 1918, 228 patients were admitted with 8 deaths. Of this number one was a Japanese, one a German, and the remainder were Filipinos, comprised of Christians and non-Christians.

ADMISSION OF PATIENTS.

Remaining in hospital January 1, 1918.....	6	
Admitted	228	
		234
Died	8	
Discharged	226	
		234

PERSONNEL.

- 1 chief (D. H. O.).
- 2 nurses.
- 1 servant.

SUBSISTENCE.

Total subsistence expended.....	₱390.00
Cost of subsistence per person per day.....	0.30

RECOMMENDATION BY THE MEDICAL OFFICER IN CHARGE.

That a new concrete hospital building be constructed, the present building not only being inadequate for a hospital, but is also unsuitable for such purpose as it is a light material structure.

BILIBID HOSPITAL.

Bilibid Prison, in Manila, occupies a space of 34,224 square meters of land. It is divided into two distinct departments, the *Presidio* and the *Carcel* departments. The *presidio* department comprises six sleeping brigades, the various shops of the industrial division and two *presidio* "cell houses." The *carcel* department comprises seven sleeping brigades and two *carcel* "cell houses."

The hospital is located at the extreme north of the *presidio* and *carcel* departments separated from them by a wall with a gate leading to the *presidio* side. It occupies a space of slightly over a hectare of land. It is a three-story, well ventilated, concrete building with a capacity of about 400 beds. It has four spacious wards, three isolating wards on the roof for male patients, a fair-sized women's ward, an operating room with its sterilizing apartment, a dressing room for emergency and infected cases, a clinical laboratory, a morgue, a dispensary, a doctor's office, chief nurse's office, and attendants' sleeping quarters, etc., and is furnished with all the conveniences of a good modern hospital. On the left side of the hospital the kitchen is situated, and on the extreme right are located the quarantine department, where incoming prisoners are confined for 12 to 15 days before their assignment to their respective work in prison, and a contagious department where prisoners affected with contagious diseases are confined.

BRIGADES.

There are in the whole prison 13 concrete buildings used for sleeping quarters of prisoners, which are called brigades. Each brigade has a capacity varying from 1,500 to 3,100 cubic meters, has 32 windows measuring approximately 4 square meters each, and is provided with 6 toilets, 2 shower baths, and

a sufficient number of iron beds to accommodate the prisoners, whose average number is 200 in each brigade.

WATER SUPPLY.

The prison is supplied with the city water, but before this water is used for drinking purposes, it is distilled in the prison distilling plant and stored in a wooden tank of about 8,000 gallons capacity, and prisoners are strictly prohibited from drinking undistilled water. A supply of distilled water is stored in big barrels provided with faucet and cover and placed in every brigade. The industrial division, offices, hospital, and other departments are also supplied with the distilled water.

PERSONNEL.

- 1 Chief, Philippine Health Service.
- 1 resident physician, Philippine Health Service.
- 1 chief nurse, Bureau of Prisons.
- 1 pharmacist, Bureau of Prisons.
- 1 surgical nurse, Bureau of Prisons.
- 1 hospital attendant and sanitary inspector, Bureau of Prisons.
- 3 practicanes, Bureau of Prisons.
- Prisoner assistants, Bureau of Prisons.

MORTALITY.

The general death rate for the year was 21.10 per 1,000, figured on an average prisoner population of 6,926; of which 10.40 per 1,000 represent the deaths due to non-tubercular causes, and 10.70 per 1,000 those due to pulmonary tuberculosis. Of the total 146 deaths during the year, 8 were Chinese, 137 Filipinos and 1 American.

Almost all of the inmates had Spanish influenza, and of those who contracted complications in their respiratory organs, nearly one-half died. At the date of the outbreak of the first epidemic the hospital was so overcrowded that the treatment of 1,897 patients unable to be admitted was given in their respective brigades. Among the 2,674 cases of this disease treated during the year, 71 cases of lobar pneumonia complications occurred, with 31 deaths. It will be noted that due to influenza and pulmonary tuberculosis, the death rate for the year 1918 was higher than that of 1917.

The deaths among the prisoners outside of Bilibid during the year were as follows:

Corregidor:

General diseases.....	67
Pulmonary tuberculosis.....	45
Total	112

Iwahig Penal Colony:

General diseases.....	47
Pulmonary tuberculosis.....	10
Total	57

San Ramon Penal Farm:

General diseases.....	8
Pulmonary tuberculosis.....	2
Total	10

San Lazaro Hospital:

General diseases.....	14
Pulmonary tuberculosis.....	2
Total	16

BIRTHS.

Eleven births, 8 males and 3 females, occurred in the prison during the year, including one case of twins (boys).

MORBIDITY.

The chief causes of sickness among the prisoners during the year were intestinal parasites, amœbiasis, tuberculosis, venereal disease among the new arrivals, contagious eye diseases, contagious skin diseases, grippe and respiratory diseases. All these with the exception of the influenza epidemic and a few other cases remaining from last year, were brought into the prison by newcomers or prisoners returning from work in the provinces.

INTESTINAL PARASITES.

All prisoners, without exception, upon entering Bilibid Prison, after having been given the necessary disinfecting bath and change of clothing at the main building under the supervision of the sanitary inspector, are vaccinated and then immediately sent to the quarantine department where they remain under observation for at least 12 to 15 days, and the period may be made longer according to the case, before being allowed to mingle with other prisoners. While in the quarantine department, the blood of each prisoner is examined for filaria, the stool for intestinal parasites and amoeba, and a culture is taken and sent to the Bureau of Science for examination for cholera vibrio, together with samples of urine for gonococcus, and sputum for tubercle bacillus. If the laboratory examination or the clinical examination shows that the prisoner is suffering from disease or is positive for any of the examinations above mentioned, he is transferred to the hospital or to the contagious department as the case may be, for treatment.

A total of 16,476 stool examinations, or 45 daily, were made by the laboratory during the year. Of this number, 4,634 were found positive for intestinal parasites distributed as follows:

<i>Ascaris lumbricoides</i>	2,409
Hookworm	1,636
<i>Amœba coli</i>	558
<i>Amœba histolytica</i>	21
<i>Taenia</i>	10

FILARIA.

During the year, 2,303 specimens of blood were examined for filariasis, both diurnal and nocturnal, 39, or 1.69 per cent, of which were found positive.

VENEREAL DISEASES.

Gonococcus.—Forty-three gonorrhœal examinations were made during the year, of which 34, or 79 per cent, resulted positive. Gonorrhœal prisoner patients are isolated in a ward in the contagious shed, where they remain for treatment until their urine gives a negative result on a microscopical examination. No gonorrhœa ophthalmia occurred during the year.

Syphilis.—The number of cases treated during the year was 52, 49 of which were discharged from the hospital and 3 remained at the end of the year. Blood specimens were sent to the Bureau of Science for Wasserman's reaction to verify the diagnosis.

CHOLERA.

Bilibid Prison was free from cholera during the entire year. Out of the 91,999 cultures taken and sent to the Bureau of Science for examination only one man was found to be a positive cholera carrier; this was in the month of February. This is due to the fact that there was no infection brought into the prison and to the rigid precautions exercised by the officials and the strictly hygienic way in which prisoners are fed. They are required to wash their hands before eating, and their mess pans are disinfected the very minute and each time they receive their ration. They are each furnished with a spoon and are strictly prohibited from eating with their hands.

LEPROSY.

Three cases of leprosy were found and transferred to San Lazaro Hospital during the year. Their dates of admission to the prison were: August 28, 1916; January 19, 1918; and April 15, 1915.

EYE DISEASES.

Two hundred cases were treated. All of these cases were immediately isolated and kept so until cured, to prevent any possible contamination. Almost all of the cases of eye diseases were contracted by the prisoners working outside of the prison reservation or in the provinces. The treatment in nearly all cases resulted in a cure.

SKIN DISEASES.

There were 344 cases treated in the hospital during the year, besides the many milder cases in the out-patient department. The majority of those treated were: *tinia imbricata*, scabies and eczema.

Treatment of the milder cases unable to come to the hospital was given three times a week in their corresponding brigades by prisoners classed as hospital servants.

RESPIRATORY DISEASES.

The increased death rate from these diseases was due to the influenza epidemic as already mentioned.

Ninety-four cases of lobar pneumonia were treated, with 36 deaths; also 29 cases of asthma and 1 case of gangrene of the lungs.

BERIBERI.

Twelve cases of beriberi were treated during the year. Most of these cases were brought to Bilibid Prison by the newcomers and prisoners working outside and in the provinces. The use of unpolished instead of polished rice has greatly diminished the cases of this disease in Bilibid Prison during the past few years.

TUBERCULOSIS.

Pulmonary tuberculosis as in previous years continues to hold the first place in regard to morbidity and mortality among the prisoners. Of the 179 cases treated during the year, 108 or 65.95 per cent died. The transference of tuberculous prisoners to Iwahig Penal Colony or elsewhere would improve the health of the prisoners transferred and prevent infection inside Bilibid Prison.

OTHER CONTAGIOUS DISEASES.

The following cases were treated during the year:

Measles	17
Mumps	138
Varicella	18
Varioloid	2
Smallpox	3

No deaths occurred on account of these diseases during the year.

GENERAL MEDICAL SURVEY.

In the annual general medical survey of the prison 2,633 prisoners, including females, were examined physically and microscopically, and 39.08 per cent were found positive for intestinal parasites.

The general results of the examination was as follows:

Skin diseases.....	876
Eye diseases.....	147
Mouth and teeth diseases.....	334
Hemorrhoids	59
Hydrocele	19
Hernia	15
Fistula in anus.....	5
Lipoma	32
Varicocele	19
Varicose veins.....	16
Cataract	3
Male congenital malformations—phimosis.....	4
Male congenital malformations—harelip.....	1

RECOMMENDATIONS.

1. That more windows in both the presidio and carcel "cell houses" be opened to admit more light and air.

2. That a morgue be built separated from the hospital proper.

3. That another hospital for tubercular patients be constructed in lieu of the one ward at present used, so as to prevent contamination among the inmates; otherwise tuberculous patients should be sent to Iwahig tuberculosis colony.

4. That women prisoners be not allowed to bring their children with them, and that deliveries take place outside the prison.

5. That one clerk be permanently detailed to the office of the doctor to keep all records therein.

6. That one dentist be provided.

BONTOC HOSPITAL.

A new schedule of charges was submitted and approved by the proper head of Department. In general, the hospital was conducted under the regular hospital rules, and special rules or modifications have been promulgated to meet the necessary local conditions, through biweekly bulletins. In these bulletins appear changes, assignments, disciplinary measures among the personnel, and they serve as personal talks.

One private room near the main entrance of the hospital has been made available for delivery and examining room.

*Hospital Apartments.*1. *Private rooms:*

- 2 rooms of 1 bed capacity each.
- 2 rooms of 2 beds capacity each.
- 1 room of 2 beds capacity (low payment).

2. *Free ward:*

- Male apartment, 20 beds capacity.
- Female apartment, 10 beds capacity.

3. *Isolation apartment:*

- | | |
|----------------------------|---------------|
| Male, no specified limit | } Inadequate. |
| Female, no specified limit | |

For complete isolation of lepers, a small cottage is situated a short distance from the hospital proper. There is imperative need of enlarging the hospital. The present arrangement of different apartments is very defective for the kitchen is too close to the private rooms, and during cooking the odors of the foods penetrate all the private rooms and the operating room and the office of the chief and superintendent. Another defect is that the noise caused by washing plates and kitchen utensils is very annoying to the pay patients. Another building is badly needed for kitchen and dining room of the hospital staff.

There is also need of another building for the accommodation of patients. Patients with contagious diseases have no adequate places because the present apartment for them, which is in the service building, is too small. Besides, in the service building, there are a commissary apartment, general supplies apartment, drug room, laboratory, hospital laundry, room for petroleum and muchachos, quarters, and no adequate accommodations remain for contagious diseases.

PERSONNEL.

- 1 Chief of the hospital.
- 1 resident physician.
- 1 superintendent and cashier.
- 5 nurses.
- 1 cook.
- 2 laundrymen.
- 8 house boys.

CHANGES IN THE PERSONNEL.

The position of resident physician was vacant except for about two months during the year. Consequently, the chief of the hospital has been acting in the capacity of resident physician, together with his duties as district health officer.

In the early days of 1918, the superintendent and cashier was transferred and a new one was appointed in his place.

Since the beginning of the year, there were constant changes

among the nurses and by the close of the year there were but three nurses available in the hospital.

There were but few changes among the unclassified employees.

ADMINISTRATIVE DIVISIONS.

1. General administration (main office).
2. Nursing department.
3. Property, commissary and finance.
4. Pharmacy and drug room.
5. Unclassified labor service.

(1) The general administration or office work is performed by the chief, the superintendent and the clerk of the district health officer.

(2) The nursing department includes care of patients, ward administration, housekeeping, subsistence, and other duties pertaining to nurses' work. As there was no regularly appointed chief nurse, arrangement was made that every nurse should have a term of three months as acting chief nurse.

On account of a shortage of nurses the place of acting chief nurse was often vacant. During the grippe epidemic which swept this place twice during the year, the available nurses were all employed in taking care of the sick. In short, there was a lack of nurses the whole year round. This was due to the constant changes among the nurses, resignations and transfers. On this account, nurses had to be denied their vacation leave, except one who was granted a half-month vacation.

(3) Property and commissary are under the charge of the superintendent, together with the financial and other records of the hospital. The stocks during the year were in good condition and sufficient supplies were on hand according to estimates. But the hospital suffered when the transportation was delayed considerably at times during the year due to typhoons which damaged the roads, and the supplies did not come at the expected time. Thus purchases had to be made in the local market, thereby causing a marked increase in hospital expense.

(4) The pharmacy and drug room are under the charge of the chief of the hospital. One sanitary inspector with sufficient experience was detailed for routine stock preparations.

	1916	1917	1918
Prescriptions filled	7,069	5,626	6,002
Average per month	589	468	500
Average per day	20	16	17

(5) The unclassified labor service was under the joint supervision of the chief and the superintendent. This service includes cook, laundry helpers, house boys, and their miscellaneous duties.

SERVICES.

1. In-patient department.
2. Out-patient department.
3. Gardening service.
4. Plumbing service.
5. Illumination service.
6. Manufacturing and mending service.
7. Sanitation service.
8. General supplies.

(1) *In-patient department*.—There were 710 patients admitted during 1918, 610 during 1917 and 562 during 1916. There were 20 deaths during 1918, 22 during 1917 and 17 during 1916.

Patients on hand January 1.....	33	
Admitted during the year.....	710	
	<hr/>	743
Discharged during the year.....	695	
Died during the year.....	20	
	<hr/>	715
	<hr/>	<hr/>
Patients on hand December 31.....		28
Major operations.....		8
Minor operations.....		122
Laboratory examinations.....		149
Average hospital days per patient.....		13.22

The grippe epidemic which occurred twice during the year caused a marked increase of patients. The mortality in the second epidemic was 3.4 per cent. There were but two deaths in the first epidemic, when 72 patients were admitted. The average number of hospital days of grippe cases was four.

One difficulty encountered in treating Igorot patients was that practically all of them were loath to submit to liquid or soft diet. They submitted to any kind of medical treatment prescribed.

(2) *Out-patient department or dispensary*.—The out-patient department or dispensary comprises those coming to the hospital for medicines, dressings, treatments, etc.

	1916	1917	1918
Cases	2,068	3,115	3,042
Treatments	5,395	10,544	9,797

(3) *Gardening service*.—Gardening was carried on during most of the year. As there were no regular gardeners to carry on the work, the house boys were made to do gardening, usually in the afternoons, together with the patients suffering from skin diseases. The hard stony soil rendered successful gardening difficult, especially in the absence of rain. However, quick-growing

vegetables were planted and good results were obtained. During the grippe epidemic gardening was practically abandoned as there was no available personnel.

(4) *Plumbing service.*—Plumbing service was not satisfactory during the year. There have been constant repairs of practically the whole plumbing system of the hospital. In many instances it greatly inconvenienced the service in general. Waste water overflowed in the operating and sterilizing rooms and faucets leaked in various places.

The need of more toilet facilities is imperative. At present there is only one water closet for the ward which is used by male patients, female patients and children. This water closet is situated in a small room, which is at the same time a bath room and sink for excreta and waste water and is also used for storing urinals, bed pans and sputum sups. This place has had a bad odor the whole year round in spite of efforts to keep it sanitary. No change could be made in the arrangement because there is no other place available.

The other water closet is on the first floor of the service building which is being used by the patients suffering from skin diseases, measles, varicella, etc.

(5) *Illumination service.*—The illumination of the hospital was chiefly petroleum, which is not satisfactory. In the latter part of the year, Clara lamps (alcohol) were used in the main hall, porch and sideways.

(6) *Manufacturing and mending service.*—During the year there was no regular mending service as the personnel was too limited. At times mending was performed by the nurses whenever convenient. The only articles manufactured during the year were some table napkins, baby diapers and table cloths. On account of shortage of personnel, no further articles could be manufactured nor could much mending be done. At times female convalescents mended some linen.

(7) *Sanitation service.*—The sanitary condition of the hospital was maintained during the year. The routine work in regard to cleaning was kept up and no alterations were made. The lack of toilet facilities, as already pointed out, caused much inconvenience on the part of the patients as well as of the personnel, especially when there were many patients.

The hospital site, generally speaking, is always sanitary due to its natural location and surroundings. It is always free from stagnant water. Its only undesirable feature from the sanitary point of view is the presence of Igorot rice fields just back of the service building. During rice planting this place is always flooded by the Igorots and naturally the water leaks down toward

the building, though it does not bother very much due to a canal between the rice fields and the service building. To avoid this feature it would be desirable if a portion of this land were acquired by the hospital.

SUBSISTENCE.

Month.	Open market pur- chases.	Com- missary.	Collec- tions.	Cost per capita.
January	P349.00	P230.36	P64.75	P0.47
February	142.56	310.02	145.97	.42
March	207.60	506.37	36.91	.52
April	166.74	298.57	49.96	.47
May	219.55	347.55	75.23	.55
June	282.66	385.11	153.54	.66
July	223.78	344.59	151.92	.40
August	402.13	344.89	325.42	.52
September	367.45	341.36	161.63	.51
October	170.93	404.29	54.97	.51
November	168.39	480.56	38.95	.477
December	335.85	489.23	366.44	.495

RECOMMENDATIONS.

1. The extension of the hospital to provide more accommodations for patients and to have a kitchen (new building) away from the present private rooms.

2. The provision of more toilet facilities.

3. The acquisition of the Igorot rice fields just back of the service building.

CULION LEPER COLONY.

CONSTRUCTION.

COLONY PROPER.

The *Protestant chapel*, projected several years ago, with funds from an outside donation, was started in September, completed and dedicated during the Christmas holidays. This edifice fills a long-felt want among the leper Protestants who, for a number of years, have held their religious services in a nipa shack on the water-front. The building, which is of a modified "model house" style of architecture, is centrally located, being on the third level of the colony just above "Worcester Plaza." The floor plan consists of one large assembly room with pulpit and a square partitioned off for use of nonleperous visitors and a small anteroom for the pastor. The assembly room can seat about a hundred.

The *Culion leper clubhouse*, which was started last year with donations from the lepers and the nonleper employees, was completed and inaugurated in March. This building is of the "model house" type and has been of no small consequence in adding to the contentment of the colonists. The floor plan includes a

large assembly room, a reading room and a library, being surrounded on all sides by a three-meter veranda. Well attended biweekly dances are given, also frequent afternoon teas and entertainments. A pool table has been acquired.

The *leper schoolhouse* to replace the one condemned and torn down some time ago, was started in March and is nearly completed. This building too is of the "model house" plan and is composed of two large classrooms to accommodate about 400 pupils separated by a storeroom and a room for the principal.

The new *Imhof septic tank* which was started last year is now more than two-thirds finished and will be completed in about a month after the arrival of materials which have been ordered.

Construction in the sanitary barrio has continued so that the barrio now has straight streets and the houses are constructed along uniform lines, giving the whole a very pleasing appearance. The barrio is a very popular portion of the colony, being built in a valley which protects it from both the strong north-east monsoon and the storms of the rainy season which come from the west and south. A combination water closet and laundry shed has been constructed in the barrio. Considerable swamp land has been reclaimed by filling, giving room for additional growth of the barrio.

Medicated bath house.—For a number of years it has been the desire of this Service to introduce hot medicated baths for the lepers, not only to encourage cleanliness but to alleviate the suffering caused by the numerous skin diseases, notably scabies, so common among lepers in the tropics. The scarcity of fresh water and the lack of facilities to heat large quantities of water discouraged the project until the recent installation of the electric plant.

In November last, a small bath house was started adjoining the electric plant, having facilities for six bathers at a time in separate cement tubs. The building, which is of the "model house" plan is three by six meters, having three bath rooms at each end of the building separated by a cement reserve water tank occupying the middle third of the floor plan. Into the reserve water tank, salt water is pumped from the sea, being piped from a depth of about 20 feet, at a point beyond the coral reef on the dock side, thus insuring clean water. The water from the tank is then run into the individual tubs which are of sufficient size to allow the patient to submerge to his neck. The water in the tanks is heated to the desired temperature

by live steam from the electric plant and subsequently sodium bicarbonate and sulphur are added when prescribed by the physicians for special cases.

The baths are in charge of a leper attendant whose main duty is to regulate the temperature of the baths and the time during which the bather is submerged.

Electric light plant.—Due to the failure of the Government to provide electric lights after years of planning, the Culion Fish and Ice Company incorporated itself as the Culion Ice, Fish and Electric Company and installed an electric plant which now supplies excellent lights to both the colony and Balala.

BALALA.

The *Chief's house*, which was started in 1917, was completed and occupied in April. This building is also of the modified "model house" plan, constructed on the second level, adjoining the sisters' house. The floor plan includes a large dining room and sala, two bed rooms with baths, a kitchen and a storeroom, being surrounded on three sides by a three-meter veranda. This house is by far the most attractive building in Culion. Unfortunately, the house, which was built during the experimental period of the "model house," was constructed with too low a pitch to the roof so that during driving rains there are numerous leaks, the water being driven between the tile.

Clerks' quarters.—The old frame dwelling situated at the top of the Balala stairway leading to the second level, having become unsafe due to the action of white ants and dry rot, was torn down and replaced by a double house of the "model house" plan which provides ample accommodations for two families.

Dock bodega.—For a number of years, there has been felt a need for a warehouse on the dock into which steamers could be rapidly unloaded, it being necessary, particularly in the rainy season, to carry the cargoes directly to the main bodega. There being no funds available for such a purpose, a temporary structure was erected, composed of first group timbers with the galvanized iron roof taken from the clerks' old quarters.

New launch.—The launch *Culion*, which has seen continuous service for nearly ten years, having become unsafe for heavy sea duty, it was necessary to construct a new launch. The "Bacillus Hansen," a thirty-foot, "V-bottom," all lanete, launch was therefore constructed at the colony early in the year and fitted with a new 25 horse-power Ferro engine. This launch is very seaworthy.

MAINTENANCE.

Comparatively little work has been possible along the lines of maintenance during the present year due to the uncertainty regarding the amount of funds available and the late date at which these funds were finally released for expenditure. Such repairs as were immediately necessary were made as indicated by the circumstances. In the latter part of the year all galvanized iron roofs were painted.

The *Balala-Colony inclined road* which was started last year was continued as laborers could be spared from more important projects and should be completed in a few months. This road leads from the dock bodega to the colony by way of the explosives house. It is purposed to install a narrow gauge track and to use carabaos and cars to transport the leper supplies from Balala instead of the present expensive hand portage.

Surface drains.—Experience gained in previous rainy seasons indicated the necessity for several additional storm water drains. The two largest were placed, one leading along the road from Worcester Plaza to the canteen and another from tenement house No. 1 to the ice plant.

GENERAL ADMINISTRATION.

Clay tile and bricks.—Experiments were made in the latter part of the year to design a clay tile which could be used to replace the present expensive cement tile. Models of tile similar to the slate roofing commonly used in the United States were made from special forms and sent to Manila to be burned in the kilns at San Pedro Makati. Upon receipt of advice regarding the burning of these tile, this division should be in a position to make first-class tile and brick since it has clay which is said to be better for the purpose than that used in Manila.

Children's house.—During the year, 3 children were returned to the colony as lepers and 1 died of bacillary dysentery. Up to the present time, 64 babies have been isolated in the house; 18 have died, 18 were returned to the colony as lepers, 4 were returned with contagious diseases and 24 remain in the house. The children's house, which was constructed as an experimental institution, has shown the inadvisability of leaving the babies with their leper parents in the colony after the age of six months, as in such case a large percentage will certainly develop leprosy.

Negative house.—Five lepers, having been isolated in the negative house for two years and during that time not having been found to be bacterioscopically lepers, were sent to Manila for final examination by the technical committee. Four were released provisionally; one, having developed a spot on his cheek which was found to be bacterioscopically positive, was retained in San Lazaro. Five additional lepers were placed in the negative house for two years' observation.

Epidemic of influenza.—For the first time in the history of the colony, an epidemic disease has reached the colony proper. Influenza, in its world infestation, entered the colony in the month of October and took a toll of 216 lepers.

Typhoon.—Christmas night and the following day, for the first time since 1910, the colony was visited by a destructive typhoon which felled nearly 100 nipa houses but did no damage to permanent structures. The rebuilding of the leper houses is going on rapidly with materials issued by the Government.

Holiday visitors.—As has been the custom for several years past, the colony received visitors from the provinces during the Christmas holidays. This visit gives the parents and friends of the lepers an opportunity to see the actual conditions in Culion as well as to visit their relatives. This custom has more than repaid the Government for the expense, in aiding the collection of lepers at large and giving the lie to the former adverse criticisms regarding conditions in the colony.

CHAULMOOGRA OIL TREATMENT OF LEPROSY.

Experiments have been continued as in the past to determine whether there is any curative value in the chaulmoogra oil formula. There is nothing new to report regarding the treatment.

RESEARCH.

In July a paper was submitted for publication in the Philippine Journal of Science entitled "A Photographic Study of Leprosy." The purpose of the paper being to show, by illustrations, the progression of the disease in its various types.

A study of leprosy among children was made by the Chief of the colony and the records of the investigation will be published in the near future, probably in the Journal of the American Medical Association.

A study of the mortality and morbidity records of the colony since its beginning was made and will be published in the near future.

RECOMMENDATIONS.

(1) The Imhof septic tank should be finished and used as soon as practicable. The old tank is badly cracked and in a leaky, consequently filthy, condition.

(2) A new tenement house, of the modified "model house" plan should be constructed upon the site already leveled, just below the Catholic church in the colony. Working plans for this building are on file.

(3) Upon completion of the new tenement house, the old frame dwelling now situated below the Catholic church and to the right of the negative house should be torn down and the occupants given the new tenement house. It is imperative that this frame building be torn down before another baguio season.

(4) The construction of a new hospital ward of not less than 60 beds capacity should be started as soon as practicable, to be located adjoining the present hospital annex used for women. This building should be of the model house style but should have a cement floor with floor drains since it is necessary not only to disinfect leper wards but to flush them daily with water. The site suggested will give a solid rock foundation and will need only enough blasting to give a level foundation.

(5) Preparations should be made after the completion of the new ward to continue the proposed plan for the old hospital, namely, to add a second floor to the present old hospital connecting it with the second floor of the new hospital, thus adding two new wards, each with accommodations for 60 beds, and two or three small private rooms for patients. The north side of the portion over the present offices and rooms for the staff should be reserved for a much-needed laboratory.

(6) Not less than two additional tenement houses should be constructed on the open side of Worcester Plaza just above the sanitary barrio.

(7) At least one and preferably two new toilet-laundry buildings should be placed in the sanitary barrio to accommodate the rapidly growing population there. These should be supplied with water from the new system recommended in the next paragraph.

(8) A secondary dam should be constructed below the present dam in the river valley, to collect the subsoil seepage below the present dam. This secondary dam and reservoir should be for the exclusive use of the sanitary barrio, quarantine station and the portion of the colony proper situated on the water-front

facing Balala, by this means giving a pressure from the old system sufficient to supply the people on the second and third levels of the colony proper, who now cannot get water except when no one of the sea-level has the faucets open. A large part of the expense of this new system can be saved if cement pipes are used in place of galvanized pipe for the portion of the line not exposed to falling trees during the rainy season. A satisfactory cement pipe has been made in the colony, which with slight modification will serve the purpose.

(9) A new toilet and laundry building should be constructed at the quarantine station to replace the present midden-shed, this should be connected with the proposed water line and will not only save considerable labor in carrying fresh water into quarantine from the colony above, but will reduce the nuisances caused by the old shed.

(10) A new dwelling for the Filipino clerks, a duplicate of the one recently finished, should be constructed so that the clerks now living in the chief's old quarters may be given a safe house, the chief's old quarters having been condemned as unsafe for further use.

(11) A new lighter should be constructed to replace the one condemned and destroyed, to transport building materials from the lumber camps to the colony. At present the freight boat belonging to the Culion Ice, Fish and Electric Company is being used, to their inconvenience, since the boat is needed by them to haul firewood for their plant.

(12) A new blacksmith and machine shop should be constructed to replace the present one in Balala, which is now actually tumbling down. This can be done at small expense with a few barrels of cement for footings and a few harrigues, using the present iron roof.

Subsistence.

Month.	Employees' mess.	Filipino mess.	Leper mess.	Laborers' mess.
January	P1, 100. 19	P211. 575	P26, 726. 061	P1, 625. 64
February	981. 96	220. 08	24, 187. 80	1, 577. 66
March	1, 054. 00	251. 10	27, 249. 434	1, 910. 592
April	1, 020. 90	297. 00	28, 214. 22	1, 896. 60
May	1, 023. 00	231. 725	29, 304. 734	1, 938. 74
June	1, 027. 05	179. 55	29, 053. 08	1, 958. 10
July	1, 085. 00	160. 425	31, 398. 381	1, 368. 96
August	965. 34	203. 67	33, 486. 572	1, 194. 12
September	972. 00	191. 40	38, 312. 70	1, 482. 90
October	1, 209. 00	178. 56	36, 721. 67	1, 825. 28
November	1, 108. 20	165. 00	35, 643. 90	1, 839. 53
December	1, 107. 01	164. 92	31, 727. 26	1, 300. 48
Total	12, 653. 65	2, 455. 00	372, 025. 81	19, 719. 60

AVERAGE COST PER PERSON PER DAY.

Employees' mess.....	₱1.72
Filipino mess.....	0.69625
Leper mess.....	0.214525
Laborers' mess.....	0.34186

PAYROLLS.

Emergency	₱7,503.60
General	18,605.10
Construction	13,495.50
Leper employees.....	8,795.24
Leper payroll, public works.....	9,866.82
Leper payroll, maintenance.....	1,257.25
Leper payroll, chapel.....	741.80
Gratuities to lepers.....	37,428.08

CUYO HOSPITAL.

This hospital is conducted in a building rented by the Government from the Parish Priest of Cuyo. This building is inadequate for a hospital, but until the proposed new hospital for Cuyo is constructed, there is nothing better available.

ADMISSION AND DISCHARGE OF PATIENTS.

There were in all 138 patients admitted into the hospital during the year; 2 patients remained over from last year, making a total of 140 patients treated during the year. Of this total 119 were discharged from the hospital as cured, 17 discharged as improved, 2 died, and 2 remained in the hospital at the end of the year.

The most important diseases treated were; Malaria, 23; intestinal parasites, 20; and diseases of the stomach, 17. While the number of malarial cases treated is comparatively high, in reality this is a non-malarial district, the cases admitted into the hospital having come from Mindoro and Palawan.

PERSONNEL.

Dr. E. Ochoa was chief of the hospital from January to September and Dr. P. Araujo from October 21 to the end of the year. Mrs. Ochoa was employed as nurse from the beginning of the year to August. The personnel of the hospital at the end of the period of the year 1918 was composed of one chief, one dispensary helper, one clerk, one cook and two servants.

DISPENSARY.

During the year there were 4,193 dispensary patients treated in the hospital, 2,094 dressings made, 164 minor operations performed, and 1,837 prescriptions filled. The total shows an increase over last year.

MUNICIPAL SANITATION.

The chief of the Cuyo hospital also acted as local health officer for the municipality of Cuyo. Smallpox vaccination was carried out to some extent but has not been thorough on account of lack of personnel and funds to carry it out more extensively. In the month of November there was an epidemic of gripe and an estimated calculation showed that about 90.85 per cent of the population of the island of Cuyo had been attacked. In the municipality of Cuyo only one sanitary inspector attended to all the work of disinfecting and vaccinating, besides his regular duties.

SUBSISTENCE.

Balance on hand from 1917.....	₱503.22
Purchased from Bureau of Supply.....	405.96
Purchased in open market.....	622.77
Total	<u>1,531.95</u>
Total subsistence consumed during the year.....	1,247.52
Total subsistence condemned.....	94.05
Total subsistence missing.....	106.38
Total subsistence remaining in the hospital, January 1, 1919.....	84.00
Total	<u>1,531.95</u>

INCOME.

The total collection of the hospital during the year was ₱265.83.

During the year the voluntary contribution fund for the construction of a proposed new hospital for Cuyo has been raised from ₱1,635 at the close of the year 1917 to a total of ₱1,939.97; so that the construction of the proposed new hospital is drawing nearer each year.

IWAHIG PENAL COLONY.

The average population of the colony during the year was 1,000, including colonists, employees and their families. All the able-bodied men were engaged in industrial and agricultural work directed by the employees and under the supervision of the superintendent. The site, which has an area of 16 hectares, is supplied by springs which furnish sufficient water of good quality for drinking and other purposes, principally the irrigation of the plantations of rice and other food plants.

For the treatment of the sick, there is a general hospital of mixed materials with two rooms for 50 beds, a small room of 2 beds for communicable diseases, an operating room, a treatment room, a laboratory, a dispensary, an office, a nurses' room,

a bath room, kitchen, a toilet and a morgue. Also a *camarin* of mixed materials with cement floor, with a capacity for 12 beds, a kitchen, toilet and bath, and a small morgue is now used for advanced cases of pulmonary tuberculosis. A hospital for women and children has been moved to about 2 kilometers from the general hospital. It is of strong materials with galvanized iron roof but with partitions of woven bamboo and has a capacity for 10 beds, a kitchen and a small nurses' room. The hospital servants are colonists, some of whom have served in Bilibid Hospital. Their number has been reduced from 37 to 26.

In addition to the hospital for advanced cases of tuberculosis, there is a sort of sanatorium at the stations of Kamagong and Malinao for less advanced cases and those which have improved in the hospital. These sites are about 3 meters above sea-level. The buildings are of wood thatched with nipa, and it is proposed to move them to another site more elevated and farther from the seashore.

With the progress of improvements on the reservation it is hoped that its sanitary conditions will likewise improve, with a resultant decrease in mortality from malaria which is quite prevalent now due to the abundance of vegetation and continuous cultivation of the soil, also faulty drainage and irrigation canals and the unevenness of the ground which gives rise to pools of water during the rainy season, favoring the breeding of mosquitoes. It has been observed that cases are most frequently registered among the persons who work in the fields and live in low sites.

All the colonists sleep in groups in wooden houses with nipa roofs in the form of *camarins* constructed in the stations, some of them being provided with a bamboo or wooden bed, while others sleep upon the wooden or bamboo floor, each having a *petate*, a mosquito net, a sheet, a tin basin which serves as a plate and drinking cup, and two or three changes of clothing; except that those who are employed in agriculture and live with their own families have their respective houses and receive family rations and an open credit for such articles as they require with the privilege of paying for them with the products of their labor.

The daily per capita cost of subsistence is only 20 centavos, which is very small, especially taking into account the high prices of some of the most necessary articles, such as rice, so that often breakfast consists of only a little coffee or tea, sweet potato or corn meal with a little sugar; and dinner and supper

consist of rice alone or mixed with corn, and a small piece of fish cooked in water, with a small amount of legumes or vegetables; twice a week a little meat being served instead of fish. This ration is insufficient and in consequence the colonists contract diseases before becoming acclimated, principally malaria. The colonists who are employed in the domestic service of the employees, and the foremen receive a small monthly allowance so that they are better fed.

The water supply system consists of pipes leading the water to the houses from a tank installed at a point higher than the spring. The water is of good quality and is usually boiled before being used. Nevertheless, there appear from time to time isolated cases of dysentery and intestinal parasites, which is believed to be due to the fact that some laborers in the fields and on the roads drink water from any convenient source. To the stations not reached by the pipes, water is carried in tin buckets by means of bancas. The extension of the pipes to these sites is contemplated.

The garbage system consists of petroleum cans, fitted with covers, which are collected daily in carts, and the garbage is used as fertilizer. Formerly it was deposited on the surface, but to avoid its forming a breeding place for flies its burial or cremation whenever possible has been recommended.

Some of the employees' houses have odorless toilets; others, the hospitals and the schoolhouse use fly-proof buckets which are gathered and cleaned daily. The stations and the agriculturists' houses use the Antipolo system. The stations along the seashore use toilets discharging directly into the water.

In the new central there is a general odorless drainage system installed from the houses including the public toilet into a cement canal provided with a tank and outlet canal to the river, whose water is not used. Some of the houses have cement canals; nearly all, including the hospitals and roads, have canals of earth or boulders, the latter being abundant in the colony, which are repaired and cleaned from time to time.

There is a cemetery more than 50 meters square for the exclusive use of the colony, situated more than one and a half meters above sea level, inclosed with barbed wire, having straight paths and cross paths one and one-half meters wide and planted with trees and containing a chapel where the religious rites are held. The graves are symmetrically laid out and uniformly marked with a wooden cross. The 25-meter zone surrounding the cemetery is unoccupied.

A slaughterhouse has recently been constructed on the bank of a river. It is of wood with nipa roof and cement floor. From the slaughterhouse the beef and mutton are transported to the refrigerating room, from which they are delivered to the consumers.

The most prevalent disease is malaria in its various forms, the most frequent being splenic and cachectic, which on autopsy shows a voluminous infarct of the base weighing about 3 kilograms. All the inhabitants of the colony, including the children, have been attacked by the disease in a more or less benign form. The pernicious form of the disease is observed from May to September, when cases of black-water fever or malaria haematuria are registered, the patients having abundant and blood-scented urine. It does not appear that the intense heat and change of temperature at this period exercise a notable influence in the development of the disease.

The cases of pulmonary tuberculosis are increased from time to time by new arrivals from Bilibid Prison; some of whom appear sound, the disease being latent, but upon being obliged to work hard, exposed to the inclemencies of the weather of the colony and being poorly fed, the disease recrudesces and the patient is then treated in the hospital or sanatorium.

Trancazo or influenza was the only epidemic disease registered during the year. This disease manifested itself in an alarming manner November 22, soon spreading to all the inhabitants of the colony, including the nurses and servants, so that there remained well only 5, without counting the employees and their families, who were assisted in their own houses in addition to other colonists lightly attacked. The disease manifested itself both alone and with complications. In the latter case there were noted the three forms: ataxic, cerebral and adynamic. The cerebral form showed a fever of 39 to 40 degrees, painful joints, and grave headache, which in many cases produced epistaxis, and deafness through otitis, hearing being recovered during convalescence. The adynamic form showed a temperature of only 38 to 39 degrees falling to 34.5 degrees, great prostration, stomach cramps and sometimes slight malaise, also deafness through otitis, and catarrhal bronchitis. The ataxic form showed a temperature from 37.5 to 39 degrees, general malaise, accompanied by simple or double pneumonia, oppression of the chest, sometimes vomiting and diarrheal stools. Of the forms of grippe registered the ataxic was the gravest and most complicated and caused the greatest mortality. It

was also noted that those attacked with this form in the majority of cases had a previous history of malarial anaemia.

During the epidemic a case was noted of a patient who had previously been admitted to the hospital with pustulous eruptions of the skin from head to foot improving slowly with treatment, who on being attacked with *trancazo* of the adynamic form nearly died, but when he had completely recovered the skin eruptions had wholly disappeared.

The disease is supposed to have originated from the epidemic which occurred in Puerto Princesa early in November, aided by the sudden changes of temperature, great heat during the day and coolness at night.

The mortality only reached 4 per cent, a relatively low rate considering that in the colony there exist many cases of malarial anaemia, advanced pulmonary tuberculosis, debilitated old people, and some young children and many invalids.

The disease is now decreasing and the danger has disappeared, although a few cases of benign character are still occurring.

During the year there were 7 normal births, 6 being multiparas and one primapara. Among all of these infants, in spite of the fact that they had *trancazo* and other diseases of infancy, there was not a single death.

In view of the importance of the colony, not only on account of the number of its inhabitants who work exclusively for the Government, but also on account of the deadly malaria and other diseases which prevail there, it is highly necessary in the interest of the public service that a new modern permanent hospital be constructed as soon as possible; that the hospital be provided with a nurse for the women and children patients; that the daily labor of the colonists be reduced from 9 to 8 hours; and that the food allowance be increased from twenty to twenty-five centavos per day per colonist.

KIANGAN HOSPITAL.

This hospital is housed temporarily in a building of mixed material construction. The operation of the hospital during the year is as follows:

Number of patients admitted.....	342
Number of patients treated in the dispensary.....	1,005
Number of deaths.....	13
Percentage of deaths, including deaths from grippe epidemic per cent....	3.8
Major operations.....	None.
Minor operations.....	60

PERSONNEL.

- 1 physician (Subdistrict Health Officer.),
- 1 nurse,
- 1 sanitary Inspector (detailed in hospital.),
- 1 cook,
- 2 muchachos,
- 1 laundress.

Cost of subsistence of the patients during the year amounted to ₱770.18.

SAN LAZARO HOSPITAL.

This is the only hospital in the Philippine Islands exclusively reserved for the care and treatment of cases of dangerous and contagious diseases, and although it ranks as one of the largest and most important institutions in the Islands, yet its capacity was by far insufficient to accommodate the large number of patients during the smallpox, cholera, and influenza outbreaks.

The following table shows the operation of the hospital during the year:

Admission of patients.

Department.	In Hospi- tal Janu- ary 1, 1918.	Admit- ted.	Dis- charged.	Trans- ferred.	Escaped.	Died.	Remain- ing in Hospital January, 1919.
Insane	437	326	173	82	8	122	378
Lepers	144	302	42	260	45	10	89
Aged and infirm	32	77	21	13		35	40
Tuberculosis	87	650	404	6	2	257	68
Under observation		34	18	14		2	
Cholera	2	401	261	28	1	107	6
Smallpox		1,079	533	14		528	4
Varioloid		860	780	57	12	11	
Varicella		20	14	6			
Measles	4	460	384	10		6	64
Diphtheria		75	59	1		15	
Typhoid	6	42	34	5		9	
Dysentery	1	169	119	10		40	1
Tetanus	1	52	21	1		31	
Veneral diseases	1	48	45	2		1	1
Grippe		9	6	3			
Mumps	5	162	142	2		2	21
Miscellaneous	5	37	30	7		4	1
Total	725	4,803	3,086	521	68	1,180	673

EXAMINATION OF LEPERS.

The Technical Committee on Examination of Lepers examined 274 lepers during the year, of which 243 were clinically positive, 21 clinically negative, and 10 clinically doubtful, and 221 were microscopically positive, 51 microscopically negative, and 2 microscopically doubtful.

SUBSISTENCE.

Subsistence supplies:

Balance on hand January 1, 1918.....	*2,224.52
Purchased	171,699.74
Total	173,924.26
Consumed	170,460.71
Balance on hand 31, 1918.....	3,463.55
Average cost of subsistence per month.....	14,205.06
Average number of persons subsisted per day.....	824
Average cost of subsistence per person per day.....	0.5746

RECOMMENDATIONS OF THE CHIEF OF THE HOSPITAL.

1. That the main office be removed from its present location, which is small and dark, and transform the pharmacy and commissary bodega into an office by opening a door in the wall at the right hand side of the main entrance and by widening the windows thereof.

2. That the present office be fitted up for a pharmacy and waiting room by altering the location of the shelves and counters.

3. That the old dining room and room adjoining it be fitted up as a storeroom for commissaries and general supplies by removing the partition between them and replacing it with concrete posts, fixing up the windows, and concreting the floor throughout.

4. That the old iron roof building behind the contagious diseases wards be enlarged to one and one half of its present size for quarters of hospital helpers and servants.

5. That the hospital laboratory be enlarged by removing the wooden partition between the laboratory room and veranda, and place glass windows on one side.

6. That the bathroom be repaired and new toilets installed in the old building occupied by the Insane department for males.

7. That the sinks and toilets in the new building occupied by the Insane department for males be repaired, and four small and strong cells for raving patients be built.

8. That four flush toilets and one bathroom with four shower baths be installed in the Leper department for males, and repair old toilets and bathrooms in both male and female Leper departments, and providing more ventilation.

9. That the dining room for helpers and servants be widened and the windows screened.

10. That an additional room be constructed near the door of

the general kitchen, on the west side, with iron roof and screened walls, to be used as vegetable store-room.

11. That a new building be constructed for a nurses' dormitory with sufficient capacity for 60 beds, as the one in use at the present is overcrowded, the chief of the hospital being compelled to give up the quarters provided for the chief of the institution in order to provide the nurses with quarters.

12. That 302 gold medal cots be purchased to replace the 40 iron beds in use at the present time in order to increase the capacity of the wards during epidemics, as follows:

Ward.	No. of cots.
0	57
1	46
2	56
3	56
4	87
Total	302

13. That at least two additional wards, with a capacity of 150 beds each, of the same type as the one at present under construction, be constructed each year until such time as when the hospital shall have five beds available for every 1000 people in Manila, which is believed to be a fair average to answer the present necessities and even those in times of epidemics.

14. That the crematory be repaired.

PROVINCIAL HOSPITALS.

ALBAY HOSPITAL.

This hospital was opened December 15, 1917, with a capacity of 50 beds. The number of patients treated during the year 1918 is as follows:

Patients remaining over from previous year.....	11
Patients admitted during the year.....	311
Patients discharged during the year.....	296
Patients died during the year.....	15
Patients remaining December 31st.....	11

ADMISSION OF PATIENTS.

By nationality:	
Filipinos	277
Americans	4
Spaniards	8
Chinese	20
Others	2
Total	311
Male patients.....	207
Female patients.....	104
Total	311

By ages:

Below 10 years.....	27
10 to 20 years.....	42
20 to 30 years.....	107
30 to 40 years.....	52
40 to 50 years.....	35
50 to 70 years.....	48
Total	311

SUBSISTENCE.

Number of patients subsisted during year.....	322
Number of attendants subsisted during year.....	27
Number of employees subsisted during year.....	11
Total	360
Total number of days subsisted.....	8,433
Average number of persons subsisted per day.....	24
Total cost of subsistence during year.....	₱6,281.15
Average expended per person per day.....	0.74
Received from patients during year.....	5,096.87

PERSONNEL AND SALARIES.

1 chief nurse.....	₱900.00
1 nurse	720.00
1 property clerk and cashier.....	480.00
1 practicante	300.00
2 student nurses, ₱180 each.....	360.00
1 cook	240.00
1 laundryman	180.00
1 gardener	180.00
2 servants, ₱150 each.....	300.00
Total	3,660.00

OUTDOOR CLINIC.

Consultations (total).....	369
Treatments	204
Operations	58
Attendance at residence.....	107

There were 74 operations performed during the year, 18 being major and 56 minor operations. Eight patients, seven lepers and one smallpox case, were treated in the contagious ward. Six obstetrical and 8 gynecological cases were treated.

The hospital is equipped with a complete laboratory, with the exception of a microscope which was ordered from the States a year ago. During a period lasting a few weeks the stools of all the patients in the hospital, 43 in all, were examined with a borrowed microscope. Of the 43 examinations, 37 revealed intestinal parasites, mostly round and hook worm.

LEYTE HOSPITAL.

The work of the hospital has shown a great improvement in the way of attracting the people to seek admission thereto. Sometimes the number of patients seeking admission to the hospital exceeded the capacity of the hospital, which demonstrates that the people both appreciate and recognize the hospital as one of the very necessary and most important institutions in the province.

RECOMMENDATION.

Baths and toilets.—Construction of three additional rooms—one for bathroom and two for toilets—in order to provide separate bathrooms and toilets for the patients and the personnel of the hospital, as at the present time the actual bath and toilet rooms are in common use by both the patients and the hospital personnel.

Night-watchman.—Employment of a night-watchman to keep watch over every thing and to assist the night-nurse in the performance of her duties.

Water supply.—To provide the hospital with four water-tanks, with faucets, of sufficient capacity to supply the requirements of the hospital at all times, as the present water supply is inadequate.

NAGA HOSPITAL.

During the year 1918, 1,553 patients entered the hospital, as compared with 1,000 patients during the year 1917. There were 25 deaths during the year.

Major operations.....	25
Minor operations.....	145
Surgical dressings.....	3,505
Prescriptions filled.....	6,225
Patient visits to hospital clinic.....	6,199

More patients would have entered the hospital had there been accommodations for them. The patients were from Ambos Camarines, Albay, Sorsogon, and Tayabas.

The personnel consists of the district health officer, who is at the same time chief of the hospital, 2 nurses, 4 practicanes, 1 janitor, 1 cook, 1 gardener, and 4 servants.

Appropriation has been made for an additional building for this hospital, to consist of operating room, laboratory, and four private rooms.

EXPENSES.

Salaries of employees.....	₱3,440.33
Wages of servants.....	1,808.89
Consumption of supplies and medicines.....	4,949.67
Illumination	355.78
Equipment repair service.....	26.60
Building repair service.....	122.85
Incidental expenses.....	318.63
Total expenses, 1918.....	11,022.75
Total expenses, 1917.....	13,504.78
Decrease	2,482.03
Income, 1918.....	6,030.00

LEYTE HOSPITAL.
ADMISSION OF PATIENTS.

	Admitted.	Cases.				Operations.		Dressings.		Discharged.		Died.	Remain- ing in hospital Decem- ber 31, 1918.
		Medical.	Surgical.	Obstet- rical.	Nursery.	Major.	Minor.	Major.	Minor.	Recov- ered.	Improv- ed.		
Remain- ing in hospital December 31, 1917	6												
January	14	6	3	2	1	1				8	4	1	
February	7	3	3		1					2	2	2	
March	16	6	7			1				6	7	1	
April	31	22	4	1	2					14	12	2	
May	23	8	13			2				16	7	2	
June	21	9	2	2	1					17	3		
July	19	12	3	1	2	2				11	3		
August	22	10	6	2	2					13	2		
September	17	11	3			3		85		14	3	4	
October	33	19	5	2	2			12		17	3	2	
November	44	36	1	1	3					53	2	5	
December	19	15	1	2	2					26	2	1	
Total	272	157	59	14	11	10	15	98	191	168	50	20	34

FINANCIAL STATEMENT.

Month.	Receipts.	Expenses (not in- cluding salaries.)	Expenses.	Expendi- tures.	Appro- priations.	Personnel.
January	299.85	198.05	Salaries of employees and officers	24,292.59	24,292.59	1 resident physician.
February	239.18	159.96	Wages	1,092.28	1,092.28	1 dispensary attendant.
March	107.07	188.38	Consumption of supplies and materials	5,865.42	5,865.42	cashier and property
April	331.51	184.42	Illumination and power service	5,394.60	5,394.60	clerk.
May	83.60	166.03	Building repair service	198.62	198.62	1 chief nurse.
June	101.14	199.15	Equipment repair service	23.40	23.40	3 nurses.
July	165.42	279.92	Traveling expenses	42.22	42.22	1 practitioner.
August	401.83	316.00	Losses	24.45	24.45	4 servants.
September	285.69	281.71	Depreciation expenses	1,802.35	1,802.35	1 cook.
October	287.16	293.95				1 washerwoman.
November	652.79	456.20				
December	406.38	349.47				
Total	3,295.62	3,073.24		13,735.93	13,735.93	

REPORT OF THE DIVISION OF SANITATION, CITY OF MANILA

[Dr. SALVADOR V. DEL ROSARIO, *Chief of Division.*]

REMARKS ON THE EPIDEMIOLOGY OF THE CITY OF MANILA.

The occurrence of the smallpox outbreak and the influenza epidemic within the year constitute the two principal events in the local epidemiology during 1918.

SMALLPOX.

The most remarkable feature, in the case of smallpox, is the fact that from June 1909 to March 1918, the city of Manila suffered no loss in lives from this malady although scattered cases of varioloid and varicella were registered during this interval of time. It is also to be stated that although smallpox was absent from the city, this was not the case for the remainder of the Philippine Islands as considerable prevalence of the infection in certain islands (Samar, Leyte, Cebu, Occidental, and Oriental Negros and perhaps others) was at stated intervals mentioned in the annual reports of the Service.

It is not by far an easy matter to draw an explanation of the reappearance of smallpox in Manila, after fully 9 years absence. But, if the epidemic is to be traced to the first 3 or 4 cases, it would prove very interesting to know that as far as the official information goes, the following facts have been established:

1. The increased prevalence of smallpox in certain Southern Islands and the Sub-province of Davao, Mindanao prior to its occurrence in city of Manila.

2. The first three cases registered in the city occurred as follows:

- (a) Two Tagbanwas (natives of Palawan), father and son, who were rescued while hanging to an upturned prow in Southern waters by an interisland steamer, arrived in Manila December 16, 1917, the father developing smallpox on the same date, and the son on January 1, 1918. The latter died January 10.

- (b) An English sailor arrived in Manila on December 21, 1917, from Nankin, China, and developed smallpox on December 22d.

A thorough survey of the epidemic incidence in Manila gives for the whole year 1918 the following figures:

Incidence: One thousand three hundred twenty-six cases—4.42 per 1,000 population.

Mortality: Eight hundred sixty-nine deaths—65.53 per 100 cases—2.89 per 1,000 population.

The smallpox epidemic reached its climax during April, May (29 cases reported during 24 hours on May 23d) and June and was practically brought under control during July.

A vigorous campaign of vaccination was accordingly started, simply as a continuation, though far more intensified as suggested by the situation, of the annual regular vaccination of non-immune people.

Four hundred fourteen thousand four hundred ten vaccinations were performed resulting in 69,579 positives or 45 per 100 of the total inspections made, which amounts to 154,664.

Vaccinations, 1918.

Health district—	Vaccina- tions.	Inspec- tions.	Positive.	Nega- tive.
No. 1, Intramuros	43,566	7,570	3,118	4,452
No. 2, Meisic	119,354	38,360	21,091	17,269
No. 4, Sampaloc	69,715	31,586	14,803	16,783
No. 5, Tondo	121,639	29,598	14,186	15,412
No. 6, Paco	60,136	47,550	16,381	31,169
Total	414,410	154,664	69,579	85,085

This rather low percentage of positive vaccinations, no matter how strange it may appear to those not familiar with a systematic work of vaccination in large localities, may well be accounted for by a previous although partial immunity to smallpox enjoyed by a large portion of the city population as a result of the regular vaccination and revaccination performed each year therein.

This pre-existing immunity of a large number of people in Manila is fully confirmed by these facts:

1. Pupils of the public and private schools; officers and employees of the government—wherever the annual systematic vaccination has been thoroughly and accurately performed, proved quite well protected against smallpox.

2. The severity of the epidemic was practically brought under control in about five months, a fact that could only be attainable with a partly immunized population.

To cover, however, any possible objection to the actual potency of the antivariolic vaccine as prepared by the Bureau of Science, a change in the strength of the vaccine was suggested to and adopted by the Bureau of Science, under date of June 15, 1918, as follows:

Usual 80 per 100 glycerine to be changed into 70 per 100 glycerine.

Usual dilution of 1 part of pure pulp of vaccine into 4 parts of glycerine changed into 1 part pulp into $3\frac{1}{2}$ parts glycerine.

After more than six months experience with the modified vaccine no case of vaccinia (as predicted) nor any other untoward effect resulted.

INFLUENZA.

The great pandemic of world-wide extension, through the whole year, exacted also a considerable number of victims in the city of Manila.

Revealed first by marked increase in the mortality due to respiratory diseases since the early months of the year, its presence as a genuine epidemic in the city has been later on recognized at least on two distinct occasions—the first having taken place during May and June, 1918, and the second, during October and November of the same year.

The May–June outbreak had slight significance from an epidemiological viewpoint on account of the low mortality attached to it; it was not until the second recrudescence occurring during October and November that the attention of the health officials was most gravely attracted and surveys and serious studies were promptly undertaken.

A period of but 45 days was the total duration of the second outbreak in the city of Manila (from October 15 to November 30, 1918).

The incidence in this second outbreak (perhaps better called “recrudescence”) amounted to about 37,950 cases (crude figure) representing one-eighth, or 12.5 per 100 of the city population. In other words, 126 cases for every 1,000 inhabitants thereof.

The mortality was represented by 1,156 deaths (or 3 per 100 of cases) equivalent to 3.85 deaths for every 1,000 population.

CENSUS OF INFLUENZA OCCURRENCE IN THE CITY OF MANILA.

Period covered—October 16, 1918, to November 30, 1918.

Health district.	Adults.			Children.			Total.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	General mortality.
			<i>P. cent.</i>			<i>P. cent.</i>			<i>P. cent.</i>
No. 1, Intramuros.....	3,634	70	1.9	2,039	52	2.5	5,673	122	2.1
No. 2, Meisic.....	3,905	131	3.35	2,303	137	5.9	6,208	268	4.31
No. 4, Sampaloc.....	3,410	152	4.4	3,023	121	4.	6,433	273	4.2
No. 5, Tondo.....	5,300	114	2.1	5,027	190	3.7	10,327	304	2.9
No. 6, Paco.....	4,772	91	1.9	4,537	98	2.1	9,309	189	2.
Grand total.....	21,021	558	2.6	16,929	598	3.5	37,950	1,156	3.

If the fact is considered that such a high number of cases (37,950) occurred in but 45 days (an average of about 843 cases

per day) one can but hardly imagine what a big problem was confronted by the Health Service in handling in an only fair manner the epidemic situation.

Obviously, well-to-do classes were not a matter of great concern; but not so in the case of poor and indigent people to whom the Service would have to furnish free attendance and care. In a city with very limited hospital accommodation (both official and private count less than ten with over 300,000 population) hospitals soon became packed to the limit and a rigid rule had to be drawn for the admission of only complicated cases of influenza most of them being pneumonic or broncho-pneumonic influenza cases.

The remainder, or uncomplicated cases, were all to be attended and supplied with medicines at home by the medical officers of the Service regardless of any limitation as regards places or time of call at day as well as at night time.

In regard to preventive measures against influenza, a systematic disposal of patients through isolation, hospitalization and quarantine of the cases proved unpractical as has been the case here and abroad in localities where the epidemic appeared with somewhat marked severity.

A bulletin containing prophylactic advice against influenza was profusely distributed among university and school pupils, shop-workers, tradesmen, laborers, and householders. It reads as follows:

PHILIPPINE HEALTH SERVICE.

For the information and guidance of all concerned (school teachers, business and workshop managers and foremen, householders, and others) the following rules are issued with a view to prevent as much as possible the further spread of the present epidemic influenza (trancazo) in the city of Manila:

HOW TO AVOID "TRANCAZO."

Personal measures.—Immediate contagion can be prevented by a thorough hygienic care of the mouth and throat; frequent cleanings with a brush and toilet antiseptic (as a weak solution of borax, oxygenated water, etc.), and gargles several times a day. Avoid also and protect yourself against the tiny drops of saliva or mucus contained in the breath which are expelled on coughing, sneezing or talking excitedly. You should keep a safe distance of four feet or more when talking with other persons and protect your mouth and nose with a handkerchief, so as to prevent danger to others and yourself. You should not spit promiscuously on the floor and other places. The sputum and saliva of the patients should be deposited in spittons provided with disinfectants.

All the tableware, especially that used by a patient, should be thoroughly scalded (washed with hot water and soap). Also the fingers, when they are used for eating.

It is a vicious and coarse habit at all times, and especially during an epidemic of "trancazo," to put the fingers in the nose or in the mouth and then shake hands with friends or infect with them things otherwise clean.

Whether sick or in health every one should sleep with a mosquito net.

Do not send or permit children or grown persons with an incipient catarrh or malaise with *bone-ache* to attend the school, workshop, cine, theater, church or other places of meeting or gathering.

PRECAUTIONS OF A COLLECTIVE NATURE.

Daily inspection of all the personnel, excluding all those who present symptoms of catarrh or bone-ache.

Prohibition of the common use of drinking glasses and towels.

MEDICAL ASSISTANCE.

Patients need not go to a hospital. They may be attended by their own physician in their homes.

Poor persons may have the services of a health-doctor as soon as the case is reported to the corresponding station.

Anti-influenza vaccination is still in its experimental stage.

TYPHOID FEVER, DYSENTERY, AND CHOLERA.

	1917	1918
Typhoid:		
Cases.....	525	497
Deaths.....	199	118
Death-rate (per 100 cases).....	37.9	23.74
Incidence (per 1,000 population).....	1.79	1.65
Mortality (per 1,000 population).....	.68	.39
Dysentery:		
Cases.....	851	839
Deaths.....	294	218
Death-rate (per 100 cases).....	34.54	25.98
Incidence (per 1,000 population).....	2.92	2.79
Mortality (per 1,000 population).....	1	.72

From the above summary in which figures represent facts of unquestionable epidemiological interest, it is plain that a distinct though slight improvement is noticed in both typhoid fever and dysentery. This fortunate result is almost wholly traceable to a more thorough and accurate reporting of the cases which brings about a far more satisfactory disposal of the cases—better home isolation, if not hospitalization of the case, continuous concurrent disinfection of the patient's discharges and other precautions as regards food, drink and soiled fingers, all of which, experience has shown to be most instrumental in doing away with "contact infection" the well known local evil. It is firmly hoped, in this connection, that a faithful observance of the Health Service regulations in regard to the management of typhoid and dysentery cases will in time secure a steady decrease in the incidence and mortality of both diseases to the ideal minimum practically equivalent to their eradication.

	1917	1918
Cholera.....		
Cases (positive bacteriology).....	25	182
Deaths.....	8	123
Death-rate (per 100 cases).....	32	67.58
Incidence (per 1,000 population).....	0.08	.60
Mortality (per 1,000 population).....	0.02	.41

Cholera, on the other hand, has run this year a rather peculiar course in that, while practically absent during the first eight months, made a sudden appearance in September with a well marked apex in October and then decreased gradually toward the end of the year.

The peculiarities of this so-called outbreak of cholera are as follows:

1. No increase in the number of carriers prior to the appearance of cholera contrary to what has been observed in previous outbreaks with a well maintained survey for carriers.

2. A surprisingly large number of cases reported as cholera but found "negative" bacteriologically.

3. The high fatality of cases (67.58 per hundred) as compared with previous outbreaks the average fatality of the latter being nearly 33 per 100 as a rule.

Remarks 2 and 3 are fully substantiated by a careful perusal of the following table:

Month.	Cases reported.	Cases found positive.	Deaths.
January	3	1	0
February	0	0	0
March	1	0	0
April	2	0	0
May	0	0	0
June	4	0	0
July	7	0	0
August	6	0	0
September	66	30	12
October	185	77	69
November	77	55	33
December	24	19	9
Total	375	182	123

If to the above circumstances, the fact is added that the outbreak made its appearance just during the months of the year (especially October and November) in which influenza showed its highest prevalence in the city of Manila, it appears that all the reasons tend to uphold the view that this cholera outbreak rather than being one of the genuine endemic type alone, was highly favored, if not entirely determined by the existence of a few vibrio-carrying cases the virulence of the vibrio having suddenly been enhanced by an increased susceptibility of the individual due to a previous possible unrecognized attack of influenza.

Epidemic or pandemic influenza is now conceived much as due to an unknown virus which causes in the system a condition of poisoning revealed in two fundamental signs or symptoms, namely: (a) clinically, a profound prostration probably due to an injurious effect of the virus upon the nervous system, and (b) pathologically, a poisonous dyscrasic condition of the blood which

manifests itself in an *hemorrhagic* tendency and a marked *leucopenia*, indicating depressed activity of the bone marrow, and also a greatly lowered resistance to secondary infection. It is at present assumed that aside from these two essential symptoms, the varying clinical pictures following them belong all to secondary (overlapped) infections highly favored by a condition of hypersusceptibility as brought about by the influenza attack.

Admittedly these secondary or associated infections (so-called influenza complications) most often affect the air passages, from the nose and throat to the pleura (nearly 90 per 100 of cases), but there still are a number of other visceral involvements which give room for the wellknown cerebral or meningitic and abdominal among other forms of influenza. This theory would also give full account of the well observed fact of the increase in number, during influenza epidemic times, of all diseases either respiratory or otherwise.

In the case of cholera and other intestinal infections the principal incumbency rests on the "bacillus carrying" condition which means a latent existence of the specific germ, the normal aggressiveness of which is overcome by a high power of resistance in the carrier. Should this power of resistance be seriously lowered for some reason (previous influenza attack), then the typical infection would promptly make its appearance. As regards typhoid fever and dysentery, the case would be somewhat different from that of cholera infection, as typhoid and dysentery have proved, in repeated surveys, not specially concerned in or productive of the bacillus-carrying condition. As a matter of fact, however, a number of indications tend to show that typhoid fever and dysentery did not remain unaffected by the pandemic influenza during 1918.

Thus, the tables of prevalence show that for typhoid fever the only striking increase in the incidence occurred in October while for dysentery the increase was surprisingly high in August, September and October more or less corresponding to the highest prevalence of pandemic influenza, to say nothing of nonconfirmed (negative) cases of suspected cholera which lately in the course of the disease were suspected or recognized cases of typhoid or dysentery or other trivial (colibacillary) forms of intestinal disturbances without any corresponding change in records where-in they continued to be branded as cholera suspect cases.

It is not claimed from the above facts that the presence of cholera has exclusively been due to an intervening role played by influenza. The purpose is only to draw the attention of the reader to the fact that this role has been of decided importance in setting in the unexpected appearance of cholera. Obviously,

once the outbreak started this could follow a gradually separate independent course and existence, as the exciting factor (influenza) was going to its decline.

The following figures speak by themselves:

Year.	Month.	Per 100. of positives.	Mortality.
1918	September	45.45	40.
Do	October	41.62	89.61
Do	November	71.42	60.
Do	December	79.16	47.36
1919	January	81.81	50.
Do	February	50.	20.
Do	March	77.77	35.71

Certainly, if some conclusion is to be drawn from these figures, it would be the decidedly inverse ratio which has been noted between the percentage of cholera cases found positive and the mortality attached thereto, in other words the unquestionable part played by influenza in this cholera outbreak.

DIPHThERIA.

Once again diphtheria, while proving itself an illness of not much concern to the epidemiologist as shown in the table below, still offers certain unsolved points in its occurrence and fatality as pointed out in last year's report for the city of Manila, to wit:

(a) The comparatively high mortality attached to the disease whether or not confirmed bacteriologically and with the precautionary administration of curative doses of diphtheria anti-toxin.

(b) The participation of other non-specific factors in the causation of the illness.

Diphtheria in the city of Manila for the year 1918.

Month.	Total cases reported.	Positive clinically and bacteriologically.		Positive clinically only.		Total found positive.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January	16	0	0	15	4	15	4
February	5	1	1	4	1	5	2
March	9	0	0	5	0	5	0
April	10	0	0	9	3	9	3
May	3	0	0	2	1	2	1
June	4	0	0	3	1	3	1
July	5	0	0	2	1	2	1
August	3	0	0	0	0	0	0
September	1	0	0	1	1	1	1
October	5	1	0	0	0	1	0
November	6	0	0	0	0	0	0
December	3	0	0	2	2	2	2
Total	70	2	1	43	14	45	15
Per cent positive		2.80		61.42		64.28	
Death rate			50.00		32.55		33.33

DIPHTHERIA CARRIERS.

Different surveys made to localize diphtheria carriers in the city of Manila (both schools and households) gave as a result the detection of four (4) carriers during the whole year, viz., 1 in January, 1 in February, 1 in March and 1 in April, none of them in the schools as was the case in 1915, when conditions warranted diphtheria to be aptly termed a school-borne disease in so far as it concerns the city of Manila.

Measles.

	Cases.	Death.
January	103	0
February	135	0
March	138	1
April	77	1
May	57	1
June	16	0
July	1	0
August	0	0
September	1	0
October	6	0
November	2	0
December	8	0
Total	544	3

HYDROPHOBIA.

Numerical report of the incidence of rabies in dogs and in persons, in the city of Manila, during 1918.

[By months.]

Month.	Number of suspected dogs examined.		Number of persons bitten by suspected dogs.	
	Examined.	Found positive.	Persons bitten.	Contracted the disease.
January	12	^a 2	12	0
February	17	3	12	0
March	3	0	2	0
April	9	3	11	0
May	18	^b 1	13	0
June	6	1	7	0
July	5	0	5	0
August	11	0	8	0
September	9	^c 2	9	0
October	6	1	6	0
November	7	4	5	0
December	9	0	9	0
Total	112	17	99	0
Percent positive		15.17		None.

^a 1 suspicious.

^b 1 suspicious.

^c suspicious.

Numerical report of the incidence of rabies in dogs and in persons, in the city of Manila, during 1918—Continued.

[By districts.]

District.	Number of suspected dogs examined.		Number of persons bitten by suspected dogs.	
	Examined.	Found positive.	Persons bitten.	Contracted the disease.
No. 1, Intramuros	17	a 3	17	0
No. 2, Meisic	44	b 5	44	0
No. 4, Sampaloc	21	5	14	0
No. 5, Tondo	9	1	10	0
No. 6, Paco	21	3	14	0
Total	112	17	99	0
Percent positive		15. 17		None.

^a 1 suspicious.

^b 2 suspicious.

RAT CAMPAIGN.

Rats caught by springs traps.....	70,990
Rats caught by wire traps.....	31
Rats found poisoned.....	3,738
Rats caught by dogs.....	6
Rats killed by clubs and other weapons.....	11,745
Rats found dead from other causes, probably by poison.....	3,333
Total	89,843
Complaints received during the year.....	707
Complaints attended.....	707

Sanitary orders, rat-proofing.

Sanitary orders remaining from December 31, 1917.....	35
Sanitary orders issued.....	3
Total	38
Sanitary orders completed.....	23
Sanitary orders pending action by fiscal.....	6
Sanitary orders awaiting action.....	9
Total	38

Sanitary orders, cleaning.

Sanitary orders remaining from December 31, 1917.....	0
Sanitary orders issued.....	3,577
Sanitary orders completed.....	3,570
Sanitary orders awaiting action.....	7

Mosquito and fly extermination.

Houses inspected during the year.....	136,996
Houses where breeding places were found.....	11,376
Breeding places found in houses.....	12,937
Vessels ordered emptied or removed.....	11,113
Drains ordered cleaned.....	6,660
Lineal feet of drains ordered dug.....	1,985
Breeding places oiled on private premises.....	112,717
Breeding places oiled on public properties.....	89,972
Water receptacles overturned.....	12,112
Square feet of grass ordered cut.....	376½
Cans of oil used.....	2,419½
Sanitary orders issued.....	1,828
Insanity conditions reported to health stations.....	145
Number of complaints attended.....	524
Number of fines:	
\$2 each.....	2
3 do.....	22
5 do.....	83
8 do.....	1
10 each.....	9
15 do.....	1
20 each.....	2
70 do.....	1
75 do.....	1

Fly inspector's report.

Stables inspected during the year.....	12,489
Stables ordered cleaned.....	8,732
Stables cleaned.....	7,594
Market inspections made.....	182

Report of disinfections.

Cholera	2,422
Diarrhea	11
Diphtheria	145
Dysentery	1,704
Disinterments of human remains.....	182
Enteritis	6
Gonorrhea	2
Influenza	645
Leprosy	74
Measles	38
Meningitis	1
Mumps	32
Pertussis	1
Pneumonia	8
Smallpox, varioloid and varicella.....	1,934
Tuberculosis	277
Typhoid fever.....	707
Disinfections of public midden sheds.....	15,032
Total	23,221

Action taken on application for licenses.

Kind of licenses applied for.	Ap- proved.	Disap- proved.	Total acted upon.
Liquor:			
First class bars	59	1	60
Second class bars	9		9
First class bars and restaurants	36	1	37
Second class bars and restaurants	10		10
Third class bars and restaurants	1		1
Groceries	66		66
Wholesale	29		29
Druggists	11		11
Theatres	5		5
Hotels	39	1	40
Restaurants	479	65	544
Lodging houses	9	1	10
Boarding houses	36	2	38
Native wines	2,448	58	2,506
Cooked foods, fruits, vegetables, soft drinks and bakery products	2,163	122	2,285
Second hand articles	138	1	139
Barber shops	490	15	505
Barber shops (additional chairs)	1		1
Laundries	60	8	68
Public vehicles	517	67	584
Livery stables	27	2	29
Billiard and pool tables	93	7	100
Dyeing and cleaning establishments	40	1	41
Manufacturies	410	21	431
Grocery stores	211		211
Clubs	54	3	57
Advertising agencies	1		1
Theatres and cinematographs	22		22
Bowling alleys	1		1
Garages	37	1	38
Additional automobiles	9		9
Bicycle for hire	22		22
Blacksmith shops	82	1	83
Distilleries	17	1	18
Drying establishment	7	1	8
Foundries	11		11
Pawnbrokers	42		42
Permit to sell fruits, vegetables, etc	631	19	650
To operate a slot machines	2		2
Ice cream and iced mongo	80	11	91
Bakeries	42	1	43
Contractor for electric installations	3		3
Boarding stables	7	2	9
Horseshoeing establishments	22	4	26
To operate bancas	5	1	6
Drying and selling fish	1		1
White taju	13	2	15
Tattooers	11		11
Junk shops	32		32
Permit to sell sugar	18		18
Forges	20	3	23
Dairies	5	1	6
To operate a slot machines	2		2
To store combustible materials	13		13
Permit to sell dried and salted fish	19		19
Permit to preserve and can fruits	2		2
Storage of sugar	16		16
Tanneries and selling leather	9		9
Permit to sell vinegar	6		6
Stock yards	3		3
Shooting galleries	1		1
Undertaking establishments	8	1	9
Breweries	2		2
Auctioneers	3		3
Hot coffee stands	1		1
Race tracks	1		1
Public warehouses	1		1
To sell varnish preserver	1		1
Embalmers	3		3
Total	8,675	425	9,100

SUPERVISION OF WATER SUPPLIES.

Samples of drinking water examined during the year 1918.

Health District—	Samples examined.	Bacterial count—			Presumptive test.	Positive for—				Samples unfit for drinking.	Percentage unfit for drinking.
		10,000 and over.	100,000 and over.	1,000,000 and over.		Bacillus coli.	Amoebae.	Flagellates.	Ciliates.		
No. 1, Intramuros.....	248	117	131	.....	108	41	37	135	388	41	<i>P. ct.</i> 16.53
No. 2, Meisic.....	727	533	194	.....	230	59	162	354	242	59	8.11
No. 4, Sampaloc.....	354	240	114	4	129	42	69	189	78	46	12.99
No. 5, Tondo.....	914	652	256	6	344	97	174	494	282	103	11.26
No. 6, Paco.....	758	529	229	.....	271	93	162	368	147	93	12.26
Total.....	3,001	2,071	924	10	1,082	332	604	1,540	1,137	342	11.39

FINES IMPOSED.

District No. 1, Intramuros.....	₱40.00
District No. 2, Meisic.....	120.00
District No. 4, Sampaloc.....	174.00
District No. 5, Tondo.....	50.00
District No. 6, Paco.....	120.00
Total.....	504.00

SANITARY ORDERS.

Minor orders issued by assistant sanitary inspectors.

	District—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
First minor orders issued.....	2,926	1,674	571	677	66	5,914
First minor orders complied with.....	2,424	1,674	571	661	66	5,396
Second minor orders issued.....	505	.....	.....	16	.....	521
Second minor orders complied with.....	505	.....	.....	16	.....	521
Prosecutions.....	.....	.....	.....	.....	.....	.....
Fines imposed.....	.....	.....	.....	.....	.....	.....
Total amount of fines.....	.....	.....	.....	.....	.....	.....
Cases in which imprisonment was imposed.....	.....	.....	.....	.....	.....	.....
Cases dismissed or defendant acquitted.....	.....	.....	.....	.....	.....	.....

Garbage can orders, station orders (miscellaneous), and recommendations for sewer connection.

Health district—	Garbage can orders.	Station orders (miscellaneous.)	Recommendation for sewer connection.
No. 1, Intramuros	25	61	0
No. 2, Meisic	680	1,900	52
No. 4, Sampaloc	9	147	2
No. 5, Tondo	65	217	0
No. 6, Paco	77	201	0
Total	856	2,526	54

Clean-up week during the month of December.

Health district—	Places found insanitary.				Insanitary conditions corrected.				Employees.	Days spent.
	A. ^a	B. ^b	C. ^c	D. ^d	A. ^a	B. ^b	C. ^c	D. ^d		
No. 1, Intramuros	1,349	844	751	1,595	877	709	507	1,365	7	20
No. 2, Meisic	1,897	225	520	4,829	1,605	177	411	4,101	8	14
No. 4, Sampaloc	542	273	290	329	347	216	238	204	5	17
No. 5, Tondo	6,024	3,100	166	2,324	5,881	2,525	166	2,287	16	27
No. 6, Paco	600	786	654	984	387	546	492	984	9	27
Total	10,412	5,228	2,381	10,061	9,097	4,173	1,814	8,941	45	105

^a Improper handling of drinking water.

^b Mosquito breeding places.

^c Domestic animals.

^d General cleaning.

MEDICAL INSPECTION OF SCHOOLS.

The inspection work of this division has been conducted in general under the same plan as detailed in the report for the year 1917. The personnel employed in this branch of the Service consisted of 2 medical inspectors and 5 nurses, and the work has been limited to the inspection of school pupils and clinical treatment of those found to be sick. The purpose to extend the supervision to the pupils' homes and families could not be carried out because the increase in the number of nurses to ten, as was requested to the Municipal Board last year, was not approved. However, it is a satisfaction to be able to state that this matter has met with the approval of said Board for the present year of 1919, and ten nurses are now actually working.

A new dental clinic has been installed in the Southern part of the city and one more dentist was appointed to take charge of it. So there are at present 2 dental clinics for school children: 1 in Meisic for those north of the Pasig River and 1 in Paco for those south of it.

In general the physical condition of the students in the schools has compared very favorably with that of the previous year.

During the month of December the medical inspector in charge of the schools south of the Pasig River delivered a series of lectures to the girls of the Philippine Normal and Manila high schools on sanitary living.

The following tables, A, B and C, clinical work, inspection work, and dangerous communicable diseases, show the work performed in this division during the year.

Table A shows the clinical work performed monthly in the health stations of the city and compared with that of the year 1917 a reduction of 18,336 treatments is shown. The proportion of recoveries among the children treated shows also an improvement in the service because in 1917 there were 1,117 recoveries out of 84,353 treatments while in 1918 there were 1,405 out of 66,017.

In connection with the inspection work, the Service has been improved, although the personnel was not increased in number. There were 41 schools under the supervision of this division with a total of 26,055 pupils inspected in the first inspection made. Of the 41 schools, 7 were inspected 4 times; 19, 3 times; 8, twice; and 7 only once. During the year 1917 there were 40 schools under the supervision of this division, and out of them only 25 were inspected twice within the year.

With regard to epidemic diseases, Table C shows that they did not seriously affect the school children, though there was a strong outbreak of smallpox during the year. The epidemic of influenza, which invaded a large proportion of the population, affected the school children in a proportion of about 13 per cent, more or less, though the records are incomplete in this respect.

TABLE A.—*Clinic work.*

Month.	Clinic districts -	Number of operations.	Number of treatments.	Number of cured.
January	No. 1, Intramuros		1,794	17
	No. 2, Meisic		1,811	42
	No. 4, Sampaloc		1,798	47
	No. 5, Tondo		1,457	30
	No. 6, Paco		40	
February	No. 1, Intramuros		1,290	60
	No. 2, Meisic		1,083	49
	No. 4, Sampaloc		1,658	29
	No. 5, Tondo		2,125	40
	No. 6, Paco		56	12
March	No. 1, Intramuros		1,730	165
	No. 2, Meisic		1,397	62
	No. 4, Sampaloc		1,082	59
	No. 5, Tondo		1,211	32
	No. 6, Paco		72	4
April	No. 1, Intramuros		309	
	No. 2, Meisic		252	
	No. 4, Sampaloc		806	7
	No. 5, Tondo		1,275	15
	No. 6, Paco			
May	No. 1, Intramuros			
	No. 2, Meisic		900	9
	No. 4, Sampaloc		949	
	No. 5, Tondo		1,032	17
	No. 6, Paco			
June	No. 1, Intramuros		1,514	
	No. 2, Meisic		1,288	32
	No. 4, Sampaloc		1,220	
	No. 5, Tondo		1,044	20
	No. 6, Paco			
July	No. 1, Intramuros		1,329	
	No. 2, Meisic		1,950	34
	No. 4, Sampaloc		1,095	33
	No. 5, Tondo		1,395	16
	No. 6, Paco			
August	No. 1, Intramuros			
	No. 2, Meisic		2,863	81
	No. 4, Sampaloc		1,675	41
	No. 5, Tondo		1,490	22
	No. 6, Paco			
September	No. 1, Intramuros		1,769	
	No. 2, Meisic		3,763	139
	No. 4, Sampaloc		1,415	28
	No. 5, Tondo	22	1,650	33
	No. 6, Paco			
October	No. 1, Intramuros		1,509	
	No. 2, Meisic		2,330	79
	No. 4, Sampaloc		1,692	25
	No. 5, Tondo	9	1,535	22
	No. 6, Paco			
November	No. 1, Intramuros		737	
	No. 2, Meisic		1,405	36
	No. 4, Sampaloc		1,052	5
	No. 5, Tondo	2	1,530	25
	No. 6, Paco			
December	No. 1, Intramuros		1,145	
	No. 2, Meisic		1,231	19
	No. 4, Sampaloc		979	4
	No. 5, Tondo	2	1,135	15
	No. 6, Paco			
Total		35	66,017	1,405

TABLE B.—School inspection—Number of pupils examined and of defects found.

Schools.	First examination.			Second examination.			Third examination.			Fourth examination.		
	Month.	Pupils examined.	Defects found.	Month.	Pupils examined.	Defects found.	Month.	Pupils examined.	Defects found.	Month.	Pupils examined.	Defects found.
San Nicolas Primary	January	1,045	1,209	July	1,551	1,059	September	1,454	1,701	November	1,468	1,052
San Nicolas Intermediate	do	351	232	do	511	324	do	610	610	October	530	473
Magdalena Primary	do	115	115	August	754	851	October	699	697	do		
Bonifacio Primary	do	948	1,432	do	1,024	746	do	1,842	701	do		
Santa Clara Primary	do	859	1,498	do	778	735	do	735	739	do		
School of Commerce	do	183	190	do	223	116	do	182	27	do		
Gupit Primary	do	794	1,598	do	1,161	1,383	do	1,125	1,139	do		
Santa Mesa Primary	do	456	692	do	489	596	do	432	487	do		
Santa Andres Primary	do	674	933	September	715	548	do			do		
Philippine Normal	do	885	706	August	884	470	December	706	369	do		
Santa Ana Primary	do	566	709	October	605	535	do			do		
Zurbaran Primary	February	424	486	August	483	374	October	490	305	do		
Santa Cruz Intermediate	do	628	956	July	776	774	do	725	645	do		
Tondo Intermediate	do	1,212	1,791	do	1,518	2,160	September	1,471	2,211	December	1,379	2,010
San Sebastian Primary	do	565	1,085	August	700	1,060	November	692	958	do		
Lincoln Primary	do	740	861	July	750	980	September	798	1,080	November	700	729
Sampaloc Intermediate	do	467	459	August	711	690	October	768	737	do	510	584
Ermita Training	do	379	392	July	347	248	do	298	200	do		
Ermita Intermediate	do	397	410	do	485	255	do	443	251	do		
Paco Primary	do	882	764	do			do			do		
Pandacan Primary	do	459	493	August	500	426	do			do		
Santa Cruz Primary	March	332	263	July	342	222	September	322	320	December	315	171
Rizal Primary	do	1,305	1,906	do	931	914	do	914	1,221	do		
Yangco Primary	do	260	425	do	292	446	October	281	410	do		
Quiapo Primary	do	741	751	do	956	1,064	September	974	1,068	December	879	932
Intramuros Primary	do	426	421	September	546	327	do	473	313	do		
Malate Primary	do	315	330	do	356	221	December			do		
Herran Primary	do	341	263	October	663	486	do			do		
Singalong Primary	do	219	265	do			do			do		
Paco Intermediate	do	675	422	August	957	529	do	918	430	do		
Santa Mesa Branch of Central School.	June	68	55	do			do			do		
Blind and Deaf	do	50	81	do			do			do		
Melvic Primary	July	2,185	1,833	September	2,020	1,256	do			do		
Soler Primary	do	588	361	do	580	617	do	2,177	1,420	do		
Tondo Primary	do	693	909	October	814	1,070	do	501	512	do		
Manila High	do	1,534	723	November	1,221	599	do			do		
Benavides Intermediate	do	201	141	do	132	166	do			do		
Gagalangin Primary	August	941	1,464	September	906	1,294	November	166	147	do		
Central	do		157	October			do			do		
Arts and Trade	September	582	369	do			do			do		
Jefferson Primary	do	963	686	do			do			do		
Total	October	26,055	28,988		25,741	23,935		19,416	18,455		5,781	5,951

TABLE C.—*Dangerous communicable diseases.*

Schools.	Typhoid fever.	Dysentery.	Cholera.	Measles.	Variocella.	Varioloid.	Smallpox.	Tetanus.	Mumps.	Diphtheria.	Leprosy.	Pulmonary tuberculosis.
San Nicolas Primary.....	1	1		1								
San Nicolas Intermediate.....	1	1				1						
Magdalena Primary.....		1										
San Lazaro Primary.....	2				2	1		1				
Santa Clara Primary.....						1						
School of Commerce.....		1	1						1			
Gupit Primary.....												
Santa Mesa Primary.....												
San Andres Primary.....				1		2						
Philippine Normal.....	1											
Santa Ana Primary.....				1	1	2		1	1			
Zurbaran Primary.....				1		2						
Santa Cruz Intermediate.....		2				2						
Tondo Intermediate.....	1	3		1								
San Sebastian Primary.....												
Lincoln Primary.....												
Sampaloc Intermediate.....												
Ermita Training.....					1	1						
Ermita Intermediate.....												
Paco Primary.....												
Pandacan Primary.....												
Santa Cruz Primary.....												
Rizal Primary.....		2	1									
Yungco Primary.....		2										
Quapo Primary.....					1	1						
Intramuros Primary.....					1							
Malate Primary.....												
Herran Primary.....									2			
Singalong Primary.....												
Paco Intermediate.....												
Santa Mesa Branch of Central School.....	1											
Blind and Deaf.....												
Meisic Primary.....	5	3			1	3	1					
Soler Primary.....					3							
Tondo Primary.....	4	4	1				1	1				
Manila High.....	1	1		2		1			1			
Benavides Intermediate.....												
Gagalangin Primary.....		1			1	1					1	1
Central.....	1	5				2						
Arts and Trade.....	1											
Jefferson Primary.....												
Total.....	21	28	3	14	11	20	2	3	6	1	1	1

DIVISION OF SANITATION IN THE PROVINCES

[Dr. EUGENIO HERNANDO, *Chief of Division.*]

I.

ORGANIZATION.

At the close of the calendar year 1918, twenty provinces pertaining to this division were organized into 215 sanitary divisions, five into twenty-six municipal health districts and six into 126 boards of health. In this organization are comprised 763 municipalities of the 821 that this Division embraces.

Six of these provinces—Sorsogon, Mindoro, Nueva Ecija, La Union, Rizal, and Pangasinan—were organized into sanitary divisions during the year. Four other provinces—Bataan, Cavite, Laguna, and Samar—have passed resolutions by which their organization into sanitary divisions will be effective on January 1, 1919, and it is expected that during the year 1920 all the provinces embraced in this division will be organized in accordance with the provisions of Chapter 37, Article VIII, of the Revised Administrative Code.

The provincial health organizations are managed by thirty-three district health officers, who are all physicians and have their headquarters in the capital of the province assigned to them; and by 215 presidents of sanitary divisions, of whom 202 are physicians, and 13 cirujanos ministrantes, or graduate nurses. Sixty-four district nurses; twenty-one midwives; and 789 sanitary inspectors are the subordinate personnel of the physicians.

The health districts into which the Islands are divided are as follows:

No. of health district—	Province.	Rank.	Name of district health officer—
First	Cagayan	Medical inspector	Dr. F. Lopez Lubelza.
Second	Ilocos Norte	Senior surgeon	Francisco Ontañon.
Third	La Union	Surgeon	Guillermo Zandueta.
Third	Zambales	Assistant surgeon	José Zarraga.
Fourth	Rizal	Medical inspector	F. Gonzales Siojo.
Fifth	Nueva Ecija	Medical inspector	José Bantug.
Sixth	Pangasinan	Medical inspector	José Lopez Rizal.
Seventh	Tarlac	Medical inspector	Juan Nepomuceno.
Eighth	Pampanga and Bataan	Senior medical inspector	Luis Caballero.
Ninth	Bulacan	Medical inspector	Manuel Ramirez.
Tenth	Laguna	Medical inspector	Vicente Rivera Sayo.
Eleventh	Tayabas	Senior medical inspector	Rafael Villafranca.
Twelfth	Sorsogon and Masbate	Medical inspector	Felino Simpao.
Thirteenth	Ambos Camarines	Medical inspector	Gavino Vinluan.
Fourteenth	Mindoro	Assistant surgeon	Luis Gomez.
Fifteenth	Antique	Assistant surgeon	Bartolome Cella.
Fifteenth	Capiz	None	José Vidal.
Fifteenth	Iloilo	Senior medical inspector	Andres Catanjal.
Sixteenth	Batangas	Senior surgeon	Pacifico Laygo.
Seventeenth	Albay	Senior surgeon	Shannon Richmond.
Eighteenth	Occidental Negros	Senior surgeon	Donato Montinola.
Nineteenth	Cebu	None	Alfonso Raquel.
Twentieth	Bohol	Medical inspector	Manuel Ma. Aycardo.
Twenty-first ^a	Surigao	Senior surgeon	Constantino Limjoco.
Twenty-second ^a	Misamis	Senior surgeon	Francisco Xavier.
Twenty-third	Samar	Assistant surgeon	Anatolio Dasmariñas.
Twenty-fourth	Leyte	Medical inspector	José Guidote.
Twenty-fifth	Mountain Province	Medical inspector	Gabriel Intengan.
Twenty-sixth	Oriental Negros	Surgeon	José Raymundo.
Twenty-seventh	Isabela	None	José Purugganan.
Twenty-eighth ^a	Agusan	Medical inspector	Florentino Ampil.
Twenty-ninth	Ilocos Sur and Abra	Surgeon	Marciano Crisólogo.
Thirtieth	Romblon	Assistant surgeon	Cloaldo Abad.
Thirty-first	Cavite	Assistant surgeon	Eufemio Jara.

^a Health districts pertaining to the Division of Mindanao and Sulu.

The following tabulation marked with letter A shows the health organization of this division and the sanitary personnel assigned thereto during 1917 as compared with the year 1918.

Changes in the personnel.—The chief of this Division, Dr. Paul Clements, was called to the U. S. Army in the month of February and Medical Inspector Dr. Eugenio Hernando, district health officer of the Province of Bulacan, was assigned to temporarily relieve him until September 7, on which date he was appointed as chief of said division.

The following promotions were made during the present year in this division:

From senior surgeon to medical inspector:

Dr. Victorino de los Santos.
 Dr. José Avellana Basa.
 Dr. Felino Simpao.
 Dr. José Guidote.
 Dr. Manuel Ma. Aycardo.

From surgeon to senior surgeon:

Dr. Francisco Ontañon.
 Dr. José Raymundo.
 Dr. Bonifacio Mencias.
 Dr. Enrique Ochoa.

TABLE A.—Sanitary organization.

Provinces.	Organization.				Personnel.															
	Number of sanitary divisions.	Number of municipal health districts.		Number of municipal boards of health.	Number of doctors.		Number of nurses.		Number of midwives.	Number of sanitary inspectors.	Number of sanitary in- spectors welfare.		Number of clerks.	Number of attendants.	Number of other employees.					
		1917	1918		1917	1918	1917	1918			1917	1918				1917	1918			
Albay.....	8	8			8	2	3	1	3	18	18		1	1	1					
Ambos Camarines.....					8					3	3									
Antique.....	3	4			3	3			3	13	13		1	1	1					
Bataan.....					3	4	1	1		3	4									
Batanes.....				1						1	2									
Batangas.....	7	7			1	9	3	4		24	26		2	2	4					
Bohol.....	10	10			10	4	1			38	38		1	1						
Bulacan.....	9	10			9	10	10			25	30		1	1	1	1				
Cagayan.....	6	6			5	5				22	25		1	1						
Capiz.....	6	6			9	6				27	28		1	1						
Cavite.....					5	6	6		2	20	28									
Cebu.....	14	14			11	9	4	4	2	46	78		3	3						
Iloilo.....	9	14			7	9	2	4	2	31	44		2	2	1	2				
Ilocos Norte.....	4	4		3		2			1	15	16		1	1						
Ilocos Sur.....	7	7			2	1	2		3	26	27		1	1						
Isabela.....	4	4			3	5				13	15		1	1						
Laguna.....					2	1				15	17		1	1						
La Union.....					4	4	1		1	7	15									
Leyte.....	15	17			4	4				15	17									
Mindoro.....	7				11	11				42	45		3	4	6					
Mountain Province.....					2	1	1		1	9	9		1	1	1	1				
Nueva Ecija.....	6	9			6	3	7	8		27	42		1	8	14	19				
Nueva Vizcaya.....					6	8	1	1		3	7		1	1	1					
Occidental Negros.....	11	12			1	1	2		1	6	7		1	1	1	2				
Oriental Negros.....	4	6			11	12	9	10		25	26		1	1						
Pampanga.....	9	9			2	6	1	2	1	21	20		2	2						
Pangasinan.....	14	14			9	9	1	2		22	24		1	1						
Rizal.....	11	11	9	9	14	14			7	41	46		2	2	2	3				
Romblon.....			3	7	6	11				16	32		2	2						
Samar.....					2	2				8										
Sorsogon.....	9				3				1	11	18		1	1	1	1				
Tarlac.....	5	5			5	5	2	1		5	19		1	1						
Tavabas.....	9	14			5	5				16	16		1	1						
Tavabas.....	9	14			9	12	1	1	1	34	34		1	1	1					
Zambales.....	4	4			4	4				13	13		1	1						
Total.....	140	215	13	10	81	202	58	64	11	21	635	789	3	7	37	40	15	32	18	29

The following commissioned officers resigned:

Senior medical inspectors:

Dr. Gilbert I. Cullen.

Dr. Arlington Pond.

Dr. Claude E. Norris.

Senior surgeons:

Dr. Domingo Santos.

Dr. Andres Bautista.

Surgeons:

Dr. Guillermo Jimenez.

Dr. José Chaves.

The following commissioned officers were separated from the service for the causes stated below:

Chief of Division Dr. Paul Clements, died June 29, 1918.

Senior Medical Inspector Dr. Zach M. Laughlin, retired.

The following officers of the Service were transferred from one assignment to another:

Senior medical inspectors:

Dr. Andres Catanjal transferred from district health officer of Tarlac to district health officer of Iloilo.

Medical inspectors:

Dr. Gabino Vinluan transferred from district health officer of Nueva Vizcaya to district health officer of Ambos Camarines.

Dr. José Bantug transferred from district health officer of Nueva Ecija to chief of the Culion Leper Colony.

Dr. Victorino de los Santos transferred from subdistrict health officer of Calinga, Mountain Province to district health officer of Nueva Vizcaya.

Dr. José Avellana Basa transferred from special duty to the office of the chief of division of sanitation in the provinces.

Dr. Felino Simpao transferred from district health officer of Sorsogon to Manila as officer in charge of the Extra-cantonment Zone, Camp Claudio.

Dr. Manuel Ma. Aycardo transferred from sub-district health officer of Kiangnan and Ifugao, Mountain Province to district health officer of Bohol.

Dr. Manuel Ramirez transferred from the office of the chief of the division of sanitation in the provinces to district health officer of Bulacan.

Senior surgeons:

Dr. Felipe Arenas transferred from special duty to district health officer of Nueva Ecija.

Dr. Bonifacio Mencias transferred from special duty to Extra-cantonment Zone, Camp Claudio.

Surgeons:

Dr. Juan S. Fernando transferred from special duty to district health officer of Sorsogon.

The following officers served in the U. S. Army Medical Corps:

Chief of Division Dr. Paul Clements.

Senior medical inspectors:

Dr. Arlington Pond.

Dr. Almon P. Goff.

Dr. Henry Pick.

and in the Philippine National Guard Medical Corps, the following:

Senior surgeons:

Dr. Pacifico Laygo.

Dr. José Raymundo.

Dr. Enrique F. Ochoa.

Presidents of sanitary division:

Dr. Ramón Sta. Ana.

Dr. Pedro Buenseda.

Dr. Virgilio Gonzalez.

Dr. R. Perez.

Dr. Gaspar Garcia.

Dr. Eliseo Bundoc.

Methods of securing prompt information.—Telegraph, telephone and mail are the methods available for securing prompt information from the provinces comprised in this division.

Telegrams are used solely in emergency cases and to report daily the situation of any prevailing epidemic.

Information by telephone can be obtained in eighteen provinces only, the rest of the provinces sending their reports or information by mail or telegraph.

In the provinces where the municipalities are connected by means of a telephone system, this means is used in the daily report of cases or deaths from communicable diseases, and of any other matter requiring immediate action. As soon as any real or suspicious case of a communicable disease is discovered in any health district, notification of the case to the Central Office is required, and daily reports of further cases and deaths registered from the disease are submitted until such time as the epidemic is put under control.

With a view to making this division aware of the most accurate condition of the provinces it comprises, uniform weekly reports are required from each district health officer. These weekly reports are divided into five sections: Section A, statistics of total mortality and mortality under one year of age; Section B, statistics of mortality of most common diseases; Section C, statistics of mortality of communicable diseases; Section D, inspections; and Section E, miscellaneous.

Figures showing the total mortality and the mortality under one year of age by provinces are compared with the mortality for the corresponding period of the previous year. Any increase in the mortality is immediately investigated.

The same procedure is followed when increase in the number of deaths registered by the most common diseases and communicable diseases is elicited from the comparative study of Tables B and C of the weekly reports.

In Section D (Inspections), the district health officers are required to give a short statement of the daily inspection work done; the reason for such inspection, and the sanitary measures taken to remedy insanitary conditions found in their respective health districts, and in connection with the control of epidemics.

In Section E (Miscellaneous), the district health officers are required to state briefly any event of special mention that might be of use to the Central Office.

In this way the Central Office in Manila has at all times a complete control over all the health districts in the Islands and is always ready to answer any call for help from any locality where aid is needed by sending personnel, materials, or similar other aid to said localities according to their need.

Several health organizations have provided automobiles for their district health officers, and the use of this kind of transportation makes possible the immediate investigation of a case of communicable disease, the prompt application of pertinent sanitary measures as well as the inspection of their district and the supervision of the work of subordinates.

Circulars.—Eighty-nine circulars have been issued by the Central Office during the present year, the following having reference to the work of this division:

- Q-3.—Collection of lepers scattered throughout the provinces.
- Q-5.—Handling of dead bodies caused by communicable diseases.
- Q-9.—Directing district health officers to make the preliminary physical examination of recruits in the Philippine National Guard.
- Q-13.—Re persons entitled to free medical attendance.
- Q-14.—Instructions to carry out vaccination work in the provinces.
- Q-17.—Instructions to carry out vaccination work in the provinces and care in the use of vaccine virus.
- Q-18.—Making persons, firms, corporations or associations having control over any medium of transportation responsible for any unlawful transport from place to place of persons sick or suspected of communicable diseases.
- Q-19.—Regarding administration of women's clubs and puricultural centers.
- Q-20.—Campaign for the Third Liberty Loan.
- Q-22.—Establishment of home vegetable gardens.
- Q-24.—Disposal of excreta. Submitting draft of municipal ordinance.

- Q-27.—Requesting a ten-day report of smallpox, varioloid, and varicella.
- Q-29.—Memorandum stating the reports that the district health officers shall render to the Central Office.
- Q-43.—Instructions for use of anti-typhoid vaccine.
- Q-44.—Instructions for handling bacillary dysentery cases.
- Q-47.—Requesting periodical submission of samples of milk for bacteriological examination.
- Q-48.—Directing that newly born children shall be vaccinated against smallpox.
- Q-52.—Transmitting instructions for sanitary maintenance of milk offered for sale.
- Q-54.—Campaign for Fourth Liberty Loan.
- Q-58.—Making uniform the annual reports of district health officers, with adequate tabulations.
- Q-60.—Amending the regulations governing the uniforms of officers.
- Q-70.—Making compulsory the bacteriological examination for venereal diseases of dancing girls.
- Q-72.—Requesting that all laborers collected by the Bureau of Labor be physically examined before transferred to other localities.
- Q-73.—Requesting provision for all provinces of the necessary quantity of disinfectants and disinfecting pumps.
- Q-74.—Making provision for having equipment for emergency hospitals ever ready in the health districts.
- Q-80.—Appointment of employees of the Service as enumerators of the Philippine census.
- Q-82.—Designating as clean-up-week the period from December 14 to 21.
- Q-84.—Re making uniform weekly reports.

II.

FINANCIAL STATEMENT.

The appropriation for the health organization was not uniform in all the provinces as may be noted in the following Tabulation B. Each province appropriated funds for public-health work during the year, but only in accordance with their sanitary necessities and not for permanent sanitary improvements.

The amount set aside each year by provinces and municipalities is not uniform for the reason that the assignment of the amount to be contributed to the health fund of the provinces is left to the discretion of the municipal councils and the provincial boards, in accordance with section 1012 of the Administrative Code, provided that said amount be not less than five per cent nor more than ten per cent of its general funds.

For this reason, only the larger financially prosperous provinces are usually provided with laboratory facilities, free medical attendance, and medical inspection of schools; and maintain hospitals and district nurses' service.

TABLE B.—State of health fund by provinces.

Provinces.	Revenues.			Total revenues.	Expense supplies.				Total expenses.
	Balance from 1917.	Municipal allotments.	Provincial allotments.		Salaries.	Traveling expenses.	Equipments.	Medicines and disinfectants.	
Ambos Camarines		₱30,089.99		₱1,774.41	9,057.48	₱347.25		₱264.11	₱9,774.47
Albay		5,756.62		78,103.41	27,025.87	2,221.39		12,116.45	44,043.88
Antique	₱2,932.18		2,500.00	11,188.80	7,319.91	202.77		1,157.17	8,847.27
Bataan				600.00					600.00
Batangas	7,368.27	21,112.36	10,000.00	39,044.27	23,874.12	4,206.33	268.10	4,815.64	33,416.32
Bulacan	13,116.52	23,102.51	20,000.00	58,627.53	29,485.96	5,392.59	1,068.12	2,211.90	39,907.86
Bohol	16,904.46	14,597.55	14,597.55	49,599.40	20,229.28	5,794.48	11.33	2,940.26	32,306.38
Cavite				19,023.37	13,986.00			2,265.16	16,299.14
Cagayan	16,011.02	9,807.52	9,807.52	35,626.66	14,704.38	2,024.59	562.89	1,979.96	19,649.07
Cebu	2,397.17	33,097.16	30,000.00	65,354.33	43,553.45	6,834.93	182.00	12,315.54	65,370.20
Capiz	22,079.88	12,539.87	5,000.00	39,629.75	12,986.19	3,748.00		3,111.30	18,925.73
Iloilo	8,444.09	29,799.33	16,001.97	54,727.83	33,987.25	1,186.74	129.58	10,151.13	54,727.83
Ilocos Norte		13,849.27		15,849.27	16,587.76			1,549.71	9,694.65
Ilocos Sur		13,506.67	10,301.21	23,807.88	14,961.55	1,871.39	988.14	3,486.37	21,082.11
La Union		7,037.14		14,074.28	7,748.60	1,461.46		2,683.25	17,025.11
Leyte	13,961.39	34,253.45	25,600.00	71,725.99	31,659.44	7,233.03	524.45	6,758.01	47,958.49
Laguna			5,293.00	5,293.00	4,653.93	383.67	10.14	198.74	5,293.00
Mindoro	6,736.69	3,957.42	3,957.42	14,651.53	2,602.40	368.41	261.25	499.91	5,501.91
Mountain Provinces				64,816.00	60,900.00	10,300.00	2,000.00	1,900.00	55,700.00
Nueva Ecija	9.06	13,502.06	27,722.36	42,844.64	13,106.22	2,456.37	157.60	1,688.69	18,444.29
Nueva Vizcaya			5,420.00	10,916.00	6,164.30	1,251.02	455.65	554.25	719.18
Occidental Negros	868.81	18,630.80	18,630.80	38,130.41	29,431.74	2,962.55	548.16	1,534.30	34,995.45
Oriental Negros		11,916.84	8,220.90	20,137.74	11,489.30	1,955.27	564.42	2,919.80	16,774.37
Palawan				16,864.70	1,560.83	116.51		7,234.35	172.32
Pampanga	4,186.49	14,135.49	14,135.49	36,093.10	22,999.40	3,298.85	1,881.89	3,708.78	33,268.41
Pangasinan	6,534.66	36,769.39	18,000.00	56,538.00	33,008.73	6,099.01	1,911.87	6,875.67	47,710.35
Rizal		18,982.48	8,333.33	27,285.81	19,255.46	1,533.44	12.80	5,318.72	26,454.98
Romblon	241.06	3,938.90	420.00	4,584.96	203.00			39.78	271.38
Samar				8,540.00					8,540.00
Sorsogon		3,153.92	190.65	3,344.57	2,705.38	113.90	201.76		3,292.54
Tarlac	535.58	8,314.39		17,164.36	11,945.13	1,024.68		2,178.93	15,278.74
Tayabas	7,690.69	24,642.28	15,600.00	49,920.61	34,010.10	7,140.10	2,289.59	5,579.25	43,764.27
Zambales	1,039.72	4,380.05	4,380.05	8,798.84	7,080.06	474.60	39.90	1,036.67	8,853.92
Batanes			1,200.00	2,700.00	2,700.00				2,700.00
Isabela	4,150.92	7,805.53	7,805.53	19,761.98	4,172.31	695.41	500.00	131.98	5,599.74
Total	133,926.19	420,465.00	326,659.30	1,034,667.94	38,938.58	80,916.80	17,485.80	101,928.08	786,024.12

Table B shows the funds appropriated for each of the provinces embraced by this division for the public health necessities for the year 1918.

From a study of said table it can be deduced that out of the total amount expended by the health organizations in the provinces 68.31 per cent were expended in salaries; 10.28 per cent in traveling expenses; 12.97 per cent for medicine and disinfectants, and the rest was used for sanitary activities.

Comparing the total amount appropriated and the expenditures with the total population embraced by this division which is estimated to be 8,000,000 (see Table C) shows that the average annual expenditures per capita of the sum appropriated is ₱0.12; and ₱0.10 if compared with the total amount expended. If it is compared with the amount expended for medicines and disinfectants, there results an average of ₱0.02 per capita for this purpose.

It may, therefore, be safely concluded from the above-mentioned data that the importance of public health work is practically neglected in most provinces as only small amounts are appropriated for that purpose.

General consensus of opinion places the expenditures necessary for satisfactory public health activities in a community at about ₱0.50 per capita. Of the provinces which appropriated funds for public health work, only one-fourth appropriated amounts that may be considered reasonable for public health work in their respective communities.

Under present conditions the average salary of the sanitary personnel is as follows: For the district health officer, ₱2,750 per annum; for presidents of sanitary division, who are doctors, ₱1,200 per annum; for nurses, ₱720 per annum; for sanitary inspectors, ₱360; and for clerks, ₱480. The above emphasizes the fact that health officers are not highly paid as public servants.

The tendency of the division has been to appoint to the position of president of sanitary division doctors who are fully qualified on diagnosis and treatment of diseases in the individual without requiring, as chief qualification, the competence to assume the responsibilities of safeguarding the sanitation of a community.

Hence, the majority of these health officers are busy medical practitioners and devote the least possible time to public sanitation.

Having the prevention and control of communicable diseases in mind, the chief duty of the health organization in the selec-

tion of the health officers should be to choose, not the skillful medical graduate, but a trained sanitarian, even though the latter may be a nonmedical graduate.

Also the health officers should serve on a full time basis. Poorly paid, untrained, and what is worse, uninterested health officers, cannot be expected to establish an efficient record in public health work.

Public health activities in many communities are generally neglected and the health organizations in such communities are too often inadequate, inefficient and the personnel poorly paid. The value of measures necessary for the reduction of sickness and deaths from the common preventable diseases seems to be but poorly appreciated when municipal and provincial appropriations for the control of the health hazards are compared with those for other necessities.

It is true that by comparing the total revenues with the total expenditures, there is left a balance of ₱248,643.82 for the fiscal year 1918, but this balance is due to the frequent resignation of personnel in the majority of the provinces on account of their small salary and to the failure to always find substitutes. The balance is, therefore, accumulated at the expense of gained salaries. Sometimes this balance is thus purposely accumulated by the provincial boards for the construction of hospitals and other permanent sanitary improvement.

VITAL STATISTICS.

One of the chief points that health organization must consider is the scientific study of vital statistics.

The most important feature of the work of a health officer for the preservation of the community is based upon vital statistics.

"Vital statistics," said Mr. W. F. Petric, "and public health administration may be termed a business proposition and can be tested by the same standards that are used to determine the value of other industrial activities."

Statistics, in brief, is an accounting. The executive, industrial and financial manager is a requisite needed for the efficient administration of his business. A detailed analysis of the cost of production and distribution."

"The health officer of the community has a problem similar to that of the business manager in industry, and it is through vital statistics that he must test the efficiency of his management."

For the above quoted reasons great efforts have been made by this office towards demanding from the health officers most exact and complete possible statistics.

With accurate vital statistics the work of prevention and control of communicable diseases becomes easy, for it renders the district health officer able to warn himself of the occurrence of any outbreak or epidemic, or the undue prevalence of a communicable disease. Furthermore, vital statistics will show him as well as the public the efficiency of his work shown by reduction of mortality in certain groups of diseases. Also with this knowledge he will be able to exercise a general sanitary supervision over his district and efforts may thus be made with best advantage to improve the public health and reduce the death-rate in the locality under his jurisdiction.

Vital statistics of three consecutive years have been studied in this report.

Table C shows the population, mortality, natality and marriages by provinces. The total population compiled for the year 1916 in each province has been obtained by estimating the natural increase of population based on the official census for 1903. The population for 1917 has been calculated by adding to the population given for 1916, the difference between births and deaths, and the population for 1918 has been estimated in the same manner. Therefore, the population considered in each province is not exact, only a relative exactitude resulting from the arithmetical operations mentioned and really represents the population at the beginning of each year.

General statistics.—The following Table C shows marriages, births, and deaths as registered in each province during the years 1916, 1917, and 1918, giving also the death rate per 1,000 population. (See Table C, pp. 90–92.)

By a study of said table, it will be noted that the number of marriages has been almost the same during the three years mentioned. The same conclusion may be inferred from the birth rate for the same period of time, while it is smaller during 1918 on account of the influenza pandemic which caused quite a number of deaths among pregnant women.

The death rate for 1916 and 1917 is almost the same and this is very apparent in view of the fact that the epidemiological conditions prevailing during the said two years were very similar as may be elicited from the study of Tables F and G.

During the year 1918, the death-rate was 15 times more than that of 1917 on account of the influenza epidemic, while on the other hand the infant mortality in 1917, if compared with that in

TABLE C.—Condensed report of mortality by provinces.

Provinces.	1916								
	Estimated population.	Deaths.	Births.	Marriages.	Infants under 1 year.	Death rate.	Birth rate.	Marriage rate.	Infant mortality rate.
Ambos Camarines.....	251,868	6,776	8,195	897	1,385	27.90	32.53	7.12	168.99
Albay.....	259,242	8,031	11,727	2,449	2,155	30.96	45.24	18.89	192.46
Antique.....	136,472	2,161	4,875	1,065	535	15.84	35.72	15.60	105.23
Bataan.....	47,235	1,852	1,918	908	540	39.42	40.60	38.44	281.02
Bulacan.....	248,649	7,430	10,408	2,133	2,235	29.89	41.86	17.15	216.75
Batangas.....	344,018	7,277	14,817	2,838	2,639	21.15	43.07	16.49	178.78
Bohol.....	349,325	4,964	15,238	2,881	1,898	14.21	43.62	16.49	124.55
Cavite.....	138,205	5,420	5,608	1,983	1,925	39.07	40.57	15.67	343.25
Cagayan.....	157,547	3,647	6,945	1,339	1,104	23.14	44.08	16.99	158.96
Cebu.....	884,213	12,409	34,160	8,020	4,082	14.03	52.25	12.25	120.00
Capiz.....	221,022	4,534	8,132	3,731	1,165	20.51	36.79	15.66	143.25
Iloilo.....	451,782	11,585	18,995	3,343	2,517	5.62	42.04	7.39	132.50
Ilocos Norte.....	227,113	4,410	18,172	1,359	1,124	19.44	35.98	11.96	137.54
Ilocos Sur.....	292,830	5,412	10,050	1,771	1,437	18.48	34.32	12.09	142.98
La Union.....	132,230	2,440	6,533	1,269	731	18.45	49.40	19.18	111.89
Leyte.....	579,995	10,999	21,012	5,362	3,360	18.96	36.23	18.48	159.99
Laguna.....	159,717	5,931	8,088	1,829	2,101	37.14	56.27	22.90	255.37
Marikina.....	54,520	2,502	2,079	480	452	25.71	38.13	17.60	217.42
Minoro.....	190,500	2,298	2,625	598	382	12.06	13.77	6.27	145.52
Mountain Province.....	132,999	4,096	6,943	1,533	1,415	29.95	48.18	11.52	203.91
Nueva Ecija.....	26,864	4,844	1,396	1,172	203	31.42	51.96	12.80	145.41
Nueva Vizcaya.....	304,668	10,003	11,963	2,978	2,187	32.77	39.19	19.51	182.00
Occidental Negros.....	184,889	3,926	10,027	2,776	1,315	21.20	54.43	30.02	131.11
Oriental Negros.....	225,113	7,151	12,487	4,062	2,935	31.76	55.46	36.13	235.04
Palawan.....	441,816	12,307	24,071	3,796	4,040	7.86	54.26	9.04	167.75
Pangasinan.....	152,508	6,589	8,253	1,855	2,123	3.20	54.78	12.31	257.23
Rizal.....	58,255	1,111	1,858	494	214	19.07	31.89	16.95	115.17
Romblon.....	285,640	5,485	9,784	4,030	1,467	19.10	34.25	28.21	149.93
Samar.....	190,548	4,822	5,553	952	1,433	25.30	29.19	9.99	258.06
Sorsogon.....	173,758	3,770	8,059	1,252	1,483	21.70	46.49	14.54	184.01
Tarlac.....	251,700	6,552	9,392	2,302	2,029	26.03	37.30	18.29	216.03
Tagaybas.....	77,178	1,929	3,663	2,767	505	26.02	47.4	18.90	138.17
Isabela.....	59,045	1,838	2,513	596	458	32.00	42.50	20.18	181.85
Zambales.....	8,283	1,256	2,284	54	74	30.88	34.26	13.03	250.00
Total.....	67,699,747	180,986	315,821	68,974	3,648	23.50	41.02	17.92	169.87

b Including natural increase.

a No report.

Provinces.	1917						
	Estimated population.	Deaths.	Births.	Marriages.	Infants under 1 year.	Death rate.	Birth rate.
Ambos Camarines	253,262	4,666	8,993	1,575	1,221	18.42	35.59
Abay	262,938	6,326	12,157	2,727	1,583	24.97	48.00
Antique	139,186	3,373	4,734	1,225	649	24.33	34.15
Bataan	47,301	1,574	1,979	1,088	590	32.81	41.84
Bulacan	251,637	6,307	10,323	2,238	2,466	24.96	40.85
Batanga	351,558	7,610	16,573	3,178	3,157	21.64	47.14
Bohol	359,599	7,896	14,982	3,353	2,601	21.96	41.66
Cavite	138,393	4,846	6,087	1,185	1,946	35.03	43.98
Cagayan	160,845	5,355	7,017	1,766	1,478	33.20	43.62
Cebu	906,064	15,203	38,102	7,533	5,403	16.77	42.05
Capiz	224,620	5,940	9,079	2,272	1,339	26.46	40.41
Iloilo	459,500	11,372	17,177	4,734	3,252	22.56	37.38
Ilocos Norte	4,250	6,049	6,049	1,692	1,187	18.41	26.28
Ilocos Sur	297,468	6,132	10,103	1,952	1,694	27.00	33.36
La Union	136,323	3,110	6,685	1,396	1,036	22.81	49.03
Leyte	590,008	12,316	22,384	5,973	3,261	20.87	37.93
Laguna	161,871	5,286	8,632	1,723	2,063	32.36	53.53
Mindoro	55,097	1,504	2,056	556	438	29.07	37.35
Mountain Province	190,827	2,889	3,567	666	494	15.13	18.69
Nueva Ecija	135,846	4,788	7,031	1,829	1,599	35.24	51.80
Nueva Vizcaya	27,416	897	1,201	173	254	32.26	44.18
Occidental Negros	306,628	10,780	12,179	3,166	2,406	35.40	39.71
Oriental Negros	190,996	5,714	10,114	1,995	1,674	29.90	52.96
Palawan	230,449	6,884	11,439	4,508	3,004	29.87	49.63
Pampanga	453,480	12,649	24,276	5,118	4,416	27.88	63.47
Pangasinan	15,472	5,352	8,209	2,003	2,141	34.43	53.82
Rizal	59,002	1,050	1,911	687	305	17.79	32.39
Romblon	289,934	6,796	12,446	3,729	2,114	23.43	42.92
Samar	191,279	5,125	7,755	1,725	1,281	26.64	40.54
Sorsogon	178,117	4,500	7,573	1,310	1,732	25.26	42.70
Tarlac	254,540	6,059	9,625	2,435	2,006	23.27	37.60
Tayabas	78,912	2,713	3,996	826	765	36.80	45.88
Isabela	59,670	1,559	2,917	600	446	26.00	45.88
Zambales	8,311	218	2,297	45	76	26.21	35.71
Batanes							
Total	7,835,764	191,459	327,648	76,981	60,057	24.53	41.81

^b Including natural increasing.

^a No report.

TABLE C.—Condensed report of mortality by provinces—Continued.

Provinces.	1918								
	Estimated po- pulation.	Deaths.	Births.	Marriages.	Infants under 1 year.	Death rate.	Birth rate.	Marriage rate.	Infant mor- tality rate.
Ambos Camarines.....	257,589	9,233	10,887	2,315	1,637	35.83	42.26	17.97	154.96
Albay.....	268,769	11,884	12,448	2,858	2,611	46.13	48.32	17.97	210.71
Antique.....	140,547	5,229	4,854	1,032	543	37.18	35.21	14.97	111.87
Bataan.....	47,728	3,412	2,015	804	827	70.02	41.35	33.00	408.93
Batucan.....	255,553	13,681	9,951	2,015	4,302	54.94	39.99	16.15	432.32
Batangas.....	360,521	14,371	15,396	3,862	4,373	39.86	42.70	15.87	284.03
Bohol.....	366,678	11,176	14,384	3,093	2,872	30.47	39.20	16.80	199.59
Cavite.....	139,632	9,981	5,027	1,284	2,691	71.51	35.99	18.03	535.30
Cagayan.....	162,507	8,211	7,613	1,709	1,809	49.34	45.75	20.54	238.53
Cebu.....	928,963	22,858	32,169	6,122	6,120	24.60	34.62	13.18	190.24
Capiz.....	227,659	8,909	9,961	2,385	1,843	39.19	43.75	20.95	185.02
Iloilo.....	465,307	19,689	19,945	3,542	4,158	42.31	42.86	15.22	208.57
Ilocos Norte.....	229,248	7,532	8,195	1,678	1,873	33.03	35.74	14.63	226.35
Ilocos Sur.....	301,409	8,480	10,329	2,092	2,255	28.13	34.26	13.46	218.41
La Union.....	139,898	5,766	6,697	1,175	1,366	41.21	47.72	16.73	203.92
Leyte.....	600,076	9,062	14,913	5,444	2,991	15.10	24.85	18.14	200.56
Laguna.....	165,217	11,599	8,412	1,612	3,309	72.56	52.62	19.60	384.21
Mindoro.....	55,551	2,314	1,973	411	601	41.29	35.51	14.79	304.61
Mountain Province.....	191,495	5,780	3,851	539	876	30.20	20.10	5.62	227.47
Nueva Ecija.....	138,089	8,946	6,853	1,890	2,289	64.78	29.62	27.37	331.67
Nueva Vizcaya.....	27,740	2,943	1,009	1,199	420	116.53	39.95	15.76	416.25
Occidental Negros.....	308,029	13,425	12,594	2,594	2,678	46.38	40.37	13.67	212.64
Oriental Negros.....	195,396	9,262	8,687	1,595	2,442	47.40	44.48	16.32	281.11
Palawan.....									
Pampanga.....	235,004	13,561	11,772	4,602	4,337	57.73	50.09	39.16	319.67
Pangasinan.....	465,107	26,712	24,747	5,535	5,973	56.49	50.80	11.36	240.97
Rizal.....	157,229	14,584	7,449	1,850	4,139	93.86	47.94	11.90	555.64
Romblon.....	59,863	1,636	1,836	843	473	27.32	31.61	29.72	257.63
Samar.....	295,584	5,556	8,789	2,833	1,824	18.79	29.73	19.16	207.53
Sorsogon.....	193,899	7,342	8,373	1,619	1,884	37.56	43.23	16.68	213.06
Tarlac.....	131,223	7,050	5,847	1,337	2,053	3.87	32.56	14.88	351.12
Tayabas.....	258,107	11,207	10,862	2,637	2,956	43.01	42.10	20.20	251.41
Isabela.....	79,895	4,084	3,900	918	870	48.27	46.75	21.15	222.82
Zambales.....	61,028	3,025	2,754	573	587	49.56	45.12	18.77	213.00
Batanes.....	8,390	285	253	57	74	33.94	30.13	13.57	292.48
Total.....	b 7,972,953	318,784	314,845	72,054	80,115	39.98	39.50	18.18	254.45

a No report.

b Including natural increasing.

1916, is quite high and still higher if compared with that of 1918. This increase in this death-rate is also an indication that infants under one year of age have shared the toll of death caused by the world "pandemic."

To check the gradual increase of the infant mortality rate, as noted from year to year in the Philippines is not merely a sanitary but an economic and social problem which, it is believed, can be solved only when philanthropical societies are organized with the purpose of educating the Filipino mothers, especially of the poorer classes, on prenatal hygiene and the proper care of infants, the latter comprising a knowledge of infant feeding, proper clothing, housing, etc.

A mere inspection of the various city districts or barrios in the provinces would clearly show the truthfulness of the above statement.

Mortality by age groups.—Table D shows the mortality by age groups as they occurred in each province during the years 1916, 1917, and 1918. (See Table D, pp. 94–96.)

A study of this table will show a high death rate in infants from 0 to one year, if compared with the other groups of ages. Also the number of persons who died at the age of 100 years or over are higher than those registered in foreign nations' mortality statistics.

It would not seem safe to point out that the cause in explaining the high percentage of deaths of persons of 100 years of age or over is due to the diet of the Filipino farmer, because in most instances the age of these persons cannot be confirmed by lack of personal data, and also the certificate of death of the deceased is not, as a rule, available, hence the age is just based only on general appearance and some few data furnished by the family of the deceased.

Mortality from 0 to 4 years.—Table E has been made with a view to showing whether the excessive infant mortality rate in the Philippines occurs in infants under 1 year of age only or in children from 1 year to 4 years inclusively; and also to compare this mortality rate with the total mortality rate so as to see if the probable cause could be elicited which may be considered as the maintenance of the high or excessive infant death rate in the Philippines; but figures of Table E show that the mortality rate in the groups of ages from zero to 4 years is not undergoing notable changes if it is compared with the total mortality, not even in the year 1918 in which an epidemic of influenza has been registered. Therefore it may be established that more than one factor is concerned in infant mortality being so excessive. (See Table E, p. 97.)

TABLE D.—Comparative mortality by provinces according to age groups.

Provinces.	1916																	Age not stated.
	Under 30 days.	30 days to under 1 year.	1 year to under 2 years.	2 years to 4 years.	5 years to 9 years.	10 years to 14 years.	15 years to 19 years.	20 years to 29 years.	30 years to 39 years.	40 years to 49 years.	50 years to 59 years.	60 years to 69 years.	70 years to 79 years.	80 years to 89 years.	90 years to 99 years.	100 years and over.		
Albay	736	1,419	803	989	472	230	282	674	470	414	400	381	314	243	132	59	13	
Ambos Camarines	486	899	511	830	499	422	438	387	359	449	423	305	339	165	157	72	35	
Antique	214	321	174	227	134	66	73	167	150	147	118	125	105	70	50	16	4	
Bataan	244	296	186	196	184	27	38	144	140	132	71	70	56	35	20	13		
Batanes	38	36	35	30	20	10	10	15	10	10	9	14	15	4				
Bulacan	936	1,299	646	880	431	160	233	546	461	444	377	330	242	206	147	76	6	
Batangas	1,253	1,386	575	747	356	149	202	243	293	414	380	327	357	259	204	132	41	
Bohol	904	994	321	279	202	105	169	398	303	240	206	253	244	160	99	46	3	
Cavite	843	1,082	522	644	300	112	108	267	253	298	250	254	201	146	105	32	8	
Capayan	574	530	362	341	171	71	100	257	239	255	227	199	138	82	51	20	30	
Cebu	1,611	2,476	1,331	1,028	577	426	510	501	528	610	593	549	586	512	302	176	93	
Capiz	465	700	318	364	330	131	162	375	338	338	264	275	201	151	71	97	14	
Iloilo	1,117	1,400	1,109	1,482	1,142	456	555	599	614	713	671	541	460	309	214	131	72	
Iloilo Norte	481	1,643	512	636	325	103	170	197	171	216	190	254	235	169	75	28	5	
Ilocos Sur	704	733	626	760	371	124	110	273	275	287	260	290	259	206	78	46	10	
La Union	313	418	242	237	140	59	7	137	171	144	119	124	105	87	45	17	5	
Leyte	905	2,455	1,179	1,178	821	296	371	940	644	526	461	454	333	230	115	80	11	
Laguna	798	1,303	530	606	252	109	164	444	355	303	303	303	150	130	69	37	13	
Mindoro	149	303	116	111	87	25	82	174	100	107	85	77	40	14	11	10	10	
Mountain Province	170	212	251	322	127	250	119	165	161	119	97	88	120	50	26	16	5	
Nueva Ecija	628	787	417	401	206	82	149	248	221	218	196	177	129	87	66	73	11	
Nueva Vizcaya	71	132	61	68	75	33	40	84	39	55	52	51	33	21	16	11	2	
Occidental Negros	982	1,205	930	1,556	843	266	387	790	645	696	503	401	295	228	149	71	56	
Oriental Negros	569	746	421	284	195	81	165	302	316	227	197	184	111	82	21	23	2	
Palawan	1,262	629	660	660	368	89	157	152	228	397	367	293	317	214	194	84	67	
Pampanga	2,131	1,909	1,195	1,284	698	263	454	764	729	723	514	505	443	357	178	156	4	
Rizal	758	1,365	677	725	360	135	124	406	358	507	244	262	250	167	137	57	57	
Romblon	98	116	91	99	75	43	74	102	92	100	64	62	43	27	15	6	4	
Samar	650	817	417	457	404	219	306	300	257	321	271	220	224	254	132	101	140	
Sorsogon	601	832	536	587	313	200	168	282	229	242	194	159	157	141	71	70	30	
Tayabas	705	1,324	599	708	346	137	257	243	278	415	399	303	329	210	146	91	62	
Tarlac	641	842	432	357	163	82	93	210	215	193	150	110	95	86	49	49	3	
Isabela	212	293	209	233	99	70	87	76	82	125	123	113	87	57	26	23	9	
Zambales	221	237	242	242	148	41	72	137	135	137	89	79	59	32	23	17	1	
Total	22,470	31,178	17,181	19,548	11,234	5,072	6,506	10,999	9,859	10,891	8,872	8,142	7,072	5,191	3,194	1,877	818	

a No report.

1917

Provinces.	Under 30 days.	30 days to under 1 year.	1 year to under 2 years.	2 year to 4 years.	5 years to 9 years.	10 years to 14 years.	15 years to 19 years.	20 years to 29 years.	30 years to 39 years.	40 years to 49 years.	50 years to 59 years.	60 years to 69 years.	70 years to 79 years.	80 years to 89 years.	90 years to 99 years.	100 years and over.	Age not stated.
Albay.....	715	868	548	757	379	157	180	555	439	369	331	344	260	220	138	66	.....
Ambos Camarines.....	528	693	416	455	267	160	211	221	261	299	292	285	243	170	138	67	41
Antique.....	220	429	354	501	333	94	87	276	207	179	169	184	142	114	68	13	24
Bataan.....	250	340	132	155	86	22	40	101	100	84	75	73	31	36	28	3	.....
Batanes.....	50	26	10	5	6	4	4	11	7	14	12	32	31	8	1	.....	.....
Bulacan.....	945	1,521	430	465	244	106	177	389	364	409	354	309	229	201	134	25	.....
Batangas.....	1,493	1,664	611	783	335	123	177	176	284	415	351	331	320	240	166	136	.....
Bohol.....	981	1,620	622	463	247	267	247	640	474	372	325	345	348	289	122	53	36
Cavite.....	542	1,404	439	642	215	67	80	193	253	222	199	183	157	126	89	25	10
Cagayan.....	679	799	643	837	501	118	138	249	241	275	234	217	189	136	64	3	2
Cebu.....	1,948	3,455	1,538	1,120	755	469	455	628	672	840	783	681	692	479	383	138	107
Capiz.....	1,473	866	1,035	1,302	604	98	170	351	396	401	275	321	269	195	116	64	10
Iloilo.....	1,035	2,217	1,367	1,302	1,005	675	416	631	510	530	485	434	359	176	140	61	28
Ilocos Norte.....	522	645	419	432	355	116	147	172	211	225	201	270	242	171	84	33	5
Ilocos Sur.....	735	959	758	913	395	121	137	261	270	310	267	282	303	248	142	8	23
La Union.....	387	649	360	309	163	70	89	162	183	152	119	132	138	106	58	28	5
Leyte.....	875	2,386	1,134	1,231	1,103	486	430	864	864	722	629	549	313	309	218	98	55
Laguna.....	912	1,151	387	452	223	80	134	310	302	303	305	308	181	105	57	34	41
Mindoro.....	149	289	196	168	92	38	63	155	110	96	90	60	34	26	15	4	19
Mountain Province.....	214	280	328	347	159	228	205	194	259	206	102	150	73	63	38	10	28
Nueva Ecija.....	614	985	629	605	293	107	114	279	212	233	154	168	141	110	90	50	4
Nueva Vizcaya.....	127	127	61	57	53	21	42	79	73	62	46	52	25	24	37	9	2
Ocidental Negros.....	855	1,571	1,258	1,794	1,069	213	335	772	770	609	440	429	269	226	111	77	2
Oriental Negros.....	533	1,141	570	525	440	141	176	494	420	314	305	282	154	127	59	29	4
Palawan.....	1,157	1,847	651	584	255	87	139	146	172	369	341	280	300	211	204	121	10
Pampanga.....	2,266	2,120	1,079	1,296	690	232	352	723	730	782	540	584	496	349	182	169	9
Rizal.....	868	1,273	422	413	235	74	97	296	297	297	270	251	162	188	115	57	37
Romblon.....	103	202	105	95	30	12	30	100	83	86	66	61	31	25	17	4	0
Samar.....	708	1,406	661	844	666	277	215	249	243	275	224	257	256	299	148	45	23
Sorsogon.....	552	729	471	482	258	305	214	303	281	327	303	271	192	164	104	69	70
Tayabas.....	748	1,258	502	474	281	161	211	270	302	405	362	305	326	186	157	67	44
Tarlac.....	712	1,020	550	557	224	82	81	242	198	205	155	149	109	113	56	44	3
Isabela.....	287	478	411	463	306	99	85	85	96	162	143	117	125	85	44	21	6
Zambales.....	271	175	165	207	88	26	38	111	114	111	83	55	58	33	22	22	0
Total.....	23,464	36,593	18,885	20,570	12,611	5,353	5,766	10,685	10,398	10,662	9,032	8,741	7,221	5,558	3,545	1,746	631

a No report.

TABLE D.—Comparative mortality by provinces according to age groups—Continued.

Provinces.	1918																
	Under 30 days.	30 days to under 1 year.	1 year to under 2 years.	2 years to 4 years.	5 years to 9 years.	10 years to 14 years.	15 years to 19 years.	20 years to 29 years.	30 years to 39 years.	40 years to 49 years.	50 years to 59 years.	60 years to 69 years.	70 years to 79 years.	80 years to 89 years.	90 years to 99 years.	100 years and over.	Age not stated.
Albay.....	911	1,700	1,041	2,060	1,128	354	431	686	750	767	552	458	389	326	226	100	5
Ambos Camarines.....	597	1,090	827	1,082	1,141	631	423	528	645	603	344	402	292	194	139	177	118
Antique.....	271	572	642	981	706	147	146	532	386	253	213	200	180	139	60	17	84
Bataan.....	261	566	357	491	423	128	149	153	180	226	155	115	74	65	36	27	6
Batanes.....	48	26	12	23	23	9	3	15	26	23	12	24	26	12	1	2	
Bulacan.....	1,349	2,953	1,198	1,711	1,100	270	434	1,123	933	746	509	391	349	344	213	57	1
Batangas.....	1,768	2,605	1,285	1,453	1,033	399	421	573	728	1,113	809	646	562	421	290	226	39
Bohol.....	1,074	1,798	861	1,224	1,154	424	435	975	706	570	414	503	436	313	155	91	43
Cavite.....	782	1,909	943	1,524	1,137	219	245	485	482	663	509	407	252	216	131	61	16
Cagayan.....	790	1,019	788	1,094	721	293	325	702	594	550	423	353	238	174	74	53	20
Cebu.....	1,640	4,480	2,294	2,543	2,086	690	815	888	930	1,367	1,119	1,039	994	726	635	385	227
Capiz.....	617	1,226	982	1,307	1,000	400	414	387	687	595	419	386	301	253	115	79	11
Iloilo.....	1,441	2,717	1,940	2,780	2,019	531	546	1,786	1,251	1,175	965	883	604	507	288	159	97
Ilocos Norte.....	586	1,287	701	980	562	228	287	514	517	444	329	364	306	275	98	46	8
Ilocos Sur.....	862	1,393	725	975	545	282	313	506	448	607	454	406	331	365	214	8	46
La Union.....	509	857	603	877	568	158	204	389	344	284	199	180	182	166	144	78	24
Leyte.....	697	2,294	750	763	654	284	293	414	410	585	464	416	392	240	249	90	67
Laguna.....	1,031	2,278	1,132	1,384	978	283	357	985	893	670	518	443	283	176	113	45	30
Marikina.....	1,271	2,320	1,205	1,304	1,23	133	136	207	205	186	96	78	55	50	15	7	13
Mountain Province.....	325	551	623	759	459	432	512	136	513	409	312	250	176	146	121	16	20
Nueva Ecija.....	919	1,370	773	1,024	739	248	413	539	565	759	596	338	250	171	132	93	17
Nueva Vizcaya.....	120	300	163	286	243	161	219	432	334	264	170	94	60	35	18	19	5
Occidental Negros.....	933	1,745	1,433	2,281	1,552	416	624	383	978	846	647	605	349	322	164	109	38
Oriental Negros.....	600	1,842	1,966	1,032	681	197	326	882	754	564	455	395	241	185	88	49	5
Palawan ^a																	
Pampanga.....	1,636	2,701	1,001	1,762	1,084	362	427	529	671	967	652	462	486	320	264	182	55
Pangasinan.....	2,589	3,384	2,820	4,010	2,739	823	1,048	2,233	1,831	1,476	1,001	927	837	482	295	207	10
Rizal.....	1,109	3,030	1,720	2,326	1,856	365	342	796	738	566	434	377	321	304	203	74	23
Romblon.....	119	354	173	216	116	34	53	69	96	116	89	90	54	34	16	7	
Samar.....	573	1,251	371	462	369	206	292	309	278	309	268	303	200	182	110	43	30
Sorsogon.....	576	1,308	559	777	608	371	297	333	376	460	373	305	303	218	177	177	124
Tayabas.....	1,135	1,821	837	886	928	390	518	1,576	905	707	573	413	276	75	105	57	6
Tarlac.....	865	1,188	568	882	592	194	263	665	546	410	260	203	146	115	76	70	5
Isabela.....	305	574	383	438	333	135	172	200	237	375	319	224	192	106	53	23	15
Zambales.....	271	316	348	467	353	73	103	242	233	196	138	102	70	52	28	35	0
Total.....	27,580	52,535	30,024	40,794	29,753	10,290	11,966	20,192	20,170	19,851	14,810	12,782	10,207	7,710	5,046	2,869	1,208

^a No report.

TABLE E.—Comparative infant mortality by provinces.

Provinces.	1916				1917				1918						
	From 0 to 1 year.	1 year to 2 years.	2 years to 4 years.	Total.	Rate compared with total mortality.	From 0 to 1 year.	1 year to 2 years.	2 years to 4 years.	Total.	Rate compared with total mortality.	From 0 to 1 year.	1 year to 2 years.	2 years to 4 years.	Total.	Rate compared with total mortality.
Albay.....	2,155	803	989	3,947	49.18	1,583	548	757	2,888	45.65	2,611	1,041	2,060	5,712	48.06
Ambos Camarines.....	1,385	511	930	2,726	40.23	1,221	416	455	2,092	44.83	1,687	1,827	2,082	5,596	38.96
Antique.....	535	174	227	936	43.22	549	354	501	1,504	44.32	1,543	642	981	2,168	41.42
Bataan.....	540	186	196	922	49.73	690	132	155	1,077	56.69	827	357	491	1,675	48.69
Batanes.....	74	35	30	139	53.52	76	10	5	91	39.90	74	12	23	1,109	35.78
Bulacan.....	2,233	646	880	3,761	50.84	2,466	430	465	3,361	53.28	4,302	1,198	1,711	7,211	52.84
Batangas.....	2,639	575	747	3,961	54.43	3,157	611	783	4,551	59.80	4,373	1,285	1,453	7,111	49.48
Bohol.....	1,898	321	279	2,498	50.32	2,601	622	622	3,845	48.74	2,872	861	1,224	4,957	43.90
Cavite.....	1,925	522	644	3,091	57.02	1,946	439	642	3,027	62.46	2,691	943	1,524	5,158	51.72
Cagayan.....	1,104	362	341	1,807	49.54	1,478	643	837	2,958	55.12	1,809	788	1,094	3,691	44.95
Cebu.....	4,082	1,331	1,028	6,441	52.36	5,403	1,538	1,120	8,061	53.02	6,120	2,294	2,543	10,957	48.02
Capiz.....	1,165	318	364	1,847	40.73	1,339	658	673	2,670	44.20	1,843	1,940	2,780	5,563	43.84
Iloilo.....	2,517	1,109	1,482	5,108	45.29	3,252	1,367	1,302	5,921	46.52	4,158	1,940	2,780	8,878	45.09
Ilocos Norte.....	1,124	512	636	2,272	51.44	1,167	419	432	2,018	26.57	1,873	701	980	3,554	46.92
Ilocos Sur.....	1,437	626	760	2,823	52.16	1,694	758	913	3,365	54.88	2,255	725	975	3,955	46.63
La Union.....	731	242	237	1,210	49.59	1,036	360	309	1,705	51.60	1,366	603	877	2,846	49.17
Leyte.....	3,360	1,179	1,178	5,717	51.97	3,261	1,134	1,231	5,626	45.68	2,991	1,132	750	4,873	50.21
Laguna.....	2,101	530	606	3,287	45.55	2,063	387	452	2,902	54.23	3,309	1,384	2,004	5,825	50.21
Mindoro.....	452	116	111	679	45.20	438	196	168	2,302	43.36	601	205	204	1,010	44.02
Mountain Province.....	382	251	322	955	41.55	494	328	347	1,169	40.46	876	623	759	2,238	39.04
Nueva Ecija.....	1,415	417	401	2,233	54.51	1,599	629	605	2,833	59.16	2,239	773	1,024	4,086	45.67
Nueva Vizcaya.....	203	61	68	332	39.33	234	61	57	372	42.41	420	163	286	869	29.53
Occidental Negros.....	2,187	930	1,556	4,673	46.74	2,406	1,258	1,794	5,458	50.64	2,678	1,433	2,281	6,392	47.61
Oriental Negros.....	1,315	421	284	2,020	71.52	1,674	570	525	2,769	48.42	2,442	966	1,032	4,440	47.90
Palawan b.....															
Pampanga.....	2,935	629	660	4,224	59.06	3,004	651	584	4,239	61.57	4,337	1,001	1,762	7,100	52.33
Pangasinan.....	4,040	1,195	1,284	6,519	52.96	4,416	1,079	1,296	6,791	53.68	5,973	2,820	4,010	12,803	47.94
Rizal.....	2,123	677	725	3,525	62.54	2,141	422	413	2,976	55.60	4,139	1,720	2,326	8,185	56.53
Romblon.....	214	91	99	404	36.35	305	105	95	505	48.09	473	173	216	862	51.93
Samar.....	1,467	417	457	2,341	42.64	2,114	661	844	3,619	53.25	1,824	371	462	2,657	47.82
Sorsogon.....	1,433	536	587	2,556	60.26	1,781	471	482	2,334	43.59	1,884	559	777	3,203	45.64
Tarlac.....	1,483	432	357	2,272	53.00	1,732	550	557	2,839	65.31	2,053	568	882	3,503	49.68
Tayabas.....	2,029	599	708	3,336	50.91	2,006	502	474	2,987	49.31	2,956	837	886	4,679	41.75
Isabela.....	505	209	233	947	49.04	765	411	463	1,637	60.41	819	343	438	1,700	30.09
Zambales.....	458	218	242	918	48.56	446	165	207	1,318	52.46	587	348	467	1,402	46.31
Total.....	53,648	17,181	19,548	90,377	51.04	60,057	18,885	20,570	99,512	51.97	80,115	30,024	40,794	150,933	44.58

^a The high mortality rate in this province is due to the smallpox epidemic.

^b No report.

Mortality by most common diseases.—In the following Table F has been grouped the deaths registered during the present year by the most common diagnosis made in the provinces.

TABLE F.—*Summary of the most common causes of mortality occurring during the last three years.*

Causes.	1916		1917		1918	
	Number.	Rate compared with total mortality.	Number.	Rate compared with total mortality.	Number.	Rate compared with total mortality.
		Per cent.		Per cent.		Per cent.
Convulsions	23,206	12.94	21,901	11.23	27,486	8.59
Simple meningitis	1,925	1.07	2,096	1.07	2,638	0.82
Congenital debility	8,133	4.53	8,825	4.52	11,663	3.61
Beriberi	6,858	3.83	8,024	4.11	11,587	3.62
Diarrhea and enteritis	6,858	3.81	6,799	3.48	7,771	2.42
Malaria	25,862	14.42	28,597	14.67	34,520	10.79
Total	72,842	40.25	76,242	39.82	95,665	30.00

Convulsions.—While it is true that the term “convulsions” is accepted as a cause of death by the International nomenclature, it is nevertheless considered to be a pseudodiagnosis as it is usually a terminal symptom of various diseases, especially those caused by a septicemia or toxemia, particularly in infants.

Hence, said disease (?) is considered to be preventable and so it is included in that group.

Considerable effort has been made by this division towards the disuse of this diagnosis by the health officers in order that in making the real specific diagnosis, the word “convulsions” which means a symptom and not a specific disease can be eliminated from the mortality statistics. The results of these efforts are that the proportion of deaths from the so-called “infantile convulsions” not certified by a qualified physician occurring within his district has been gradually decreasing as follows: 12.94 per cent in 1916; 11.23 per cent in 1917, and 8.59 per cent in 1918 notwithstanding the influenza pandemic which was present during the latter year.

Simple meningitis.—The same facts as were pointed out when discussing “infantile convulsions” can be repeated in regard to “simple meningitis,” as a great many of the “diagnosis” of “meningitis,” were only “meningismus,” which is in reality a common terminal symptom in several toxemias and septicemias, especially in infants. Fortunately this diagnosis as a cause of death is also now decreasing.

Congenital debility.—A great number of deaths from “congenital debility” is registered in the mortality statistics, this increase being more apparent if mortality figures of 1916 are

compared with those of 1918. It is believed that under the term of "congenital debility" are included many deaths produced by accidents of labor and during the puerperal state, and also which happened when childbirth caused an acute infectious disease of the mother. Hence, it is not rare that deaths registered from this cause which in 1916 were 8,133, reached as high as 11,663 during the year 1918, due undoubtedly to influenza which was severely epidemic in the latter part of the year and many pregnant women were suffering from said disease.

It is, however, regretful to state that mortality from the aforesaid cause is steadily increasing notwithstanding the fact that the health organizations in the provinces are generally improving their sanitary personnel, especially the number of district nurses. The same remark could also be made in regard to the "infant mortality rate" and mortality from "infantile beriberi" as well. The decrease of the death rate from these above-mentioned diseases should be considered as the real gauge of the efficiency and activity of the sanitary personnel especially the nurses of the province where high death rates are registered from these causes.

Beriberi.—It is not possible to obtain definite data relative to the number of deaths from beriberi by ages among infants and adults, as many of the health districts reported these deaths without giving a separate statement as to ages. Nevertheless, it may be safe to state that 75 per cent of the deaths registered from beriberi occurred among infants.

Beriberi is a cause of increased mortality, although its proportion when compared with total mortality is steadily the same. High prices of food articles and high cost of living cause the poorer class to pay its tribute to this scourge. During the year mortality from beriberi increased but it is believed that most of these diagnosis were really influenza, but confounded with this disease.

Diarrhea and enteritis.—No comment is made on this cause of death because figures remain insensibly unavailable for the three comparative years, except that it is a preventable one, though the proper selection and handling of food, drinking water, proper disposal of excreta as well as the elimination of fly breeding places would decrease the number of deaths from this disease.

Malaria.—This is one of the diseases which cause as many deaths as tuberculosis in the Philippines and both are responsible for more deaths than any serious epidemic that has ever appeared in the Islands.

For the last few years, deaths from malaria have shown progressive increase. During 1916, 25,862 deaths were registered; 28,597 in 1917, and 43,520 in 1918, although the specific mortality rate of this disease if compared with the total mortality is as follows: 1916, 14.42 per cent; 14.67 per cent in 1917, and 10.79 per cent in 1918.

Malaria is endemic in almost all provinces of the Archipelago, the most severely infected being the Provinces of Ambos Camarines, Batangas, Cagayan, Cebu, Isabela, Ilocos Norte, Ilocos Sur, Laguna, Leyte, Occidental Negros, Oriental Negros, Pangasinan, Palawan, and Tayabas.

The topographical configuration of the Islands, the prevailing seasonal changes and the comparatively small population covering great extensions of land render the eradication of malaria rather a difficult problem to solve in spite of the sanitation of the poblaciones and barrios and the free distribution of quinine to the inhabitants. The drainage of the very wide areas which constitute mosquito breeding beds cannot be worked out due to the lack of funds which such permanent improvements will require. Municipal funds are usually short, rendering the anti-malaria campaign slow and practically useless.

Summary.—Of the most common diseases the mortality from more or less preventable causes rates 30 per cent of the total mortality which is comparatively a low rate if compared with that of the years 1916 and 1917, despite the fact that during the year 1918 widespread epidemics have visited the Islands. This simply means that a little headway was made in sanitation in general, as evidenced by the decrease of mortality from preventable causes.

Mortality from communicable diseases.—Tables G, G-a, and G-b show the number of deaths registered in 1916, 1917, and 1918, respectively, from dangerous communicable diseases. Of these diseases comments will be made relative to the following: Dysentery, cholera, measles, typhoid fever and tuberculosis which are the most commonly registered in the Philippines. Under separate sections will be discussed "influenza" and "smallpox" which were widely epidemic throughout the provinces comprised by this division during the year.

Dysentery.—A total of 8,973 deaths from dysentery was reported during the year covered by this report against 7,092 in 1916 and 7,496 in 1917 with the following specific rate per cent compared with the total mortality: 3.09 per cent for 1916; 3.08 per cent for 1917; and 2.99 per cent for 1918, respectively. It is, however, remarkable that if the percentage is compared

TABLE G.—Summary of deaths caused by communicable diseases, during the year 1916.

Provinces.	Anthrax.	Dysentery.	Cholera.	Cerebro-spinal.	Diphtheria.	Influenza.	Glanders.	Hook worm.	Leprosy.	Measles.	Rabies.
Albay.....			633							56	3
Ambos Camarines.....			895		1					27	1
Aniue.....	1	402	62							3	1
Bataan.....		18	210								
Batanes.....		5								4	
Batangas.....		252	88		17				1	21	
Bohol.....	3	29	29	1		40	1				
Bulacan.....	5	348	808	1	1	20			7	28	5
Cagayan.....	2	159				87				30	
Capiz.....	7	203	106		1					6	1
Cavite.....	1	244	242		2				1	98	1
Cebu.....	12	176	12			549		6		33	1
Iloilo.....	7	699	653	1	46		2	93		1	2
Ilocos Norte.....		409		1						28	
Ilocos Sur.....		470									
Isabela.....	2	118				4		2			
Laguna.....		215	186	7	1		1			23	1
La Union.....	5	93		2		1				1	1
Leyte.....	5	812	340	1	3		6			9	
Mindoro.....		28	33								
Mountain Province.....	3	130				45		6		2	1
Nueva Ecija.....	2	105	9					19			2
Nueva Vizcaya.....		5		1							
Occidental Negros.....	8	596	1,293	9	2	85				186	2
Oriental Negros.....	2	74	764		1		3				2
Palawan.....											
Pampanga.....	8	84	203							60	1
Pangasinan.....	11	117			1	41	2		1	3	6
Rizal.....	4	141	396	2	2			72		21	2
Romblon.....	6	25	145	8					1	1	
Samar.....		296	178		1			2		4	
Sorsogon.....	1	143	322			32				25	13
Tarlac.....	2	81		1				11		5	1
Tayabas.....	1	364	10		2		2		1	2	
Zambales.....			57							1	
Total.....	98	7,092	7,377	32	81	705	17	212	12	683	49

TABLE G.—Summary of deaths caused by communicable diseases, during the year 1916—Continued.

Provinces.	Scarlatina.	Smallpox.	Syphilis.	Typhoid fever.	Tuberculosis of the lungs.	Tuberculosis of the vis of other organs.	Tetanus.	Whooping cough.	Total.	Rate compared with total mortality.
Albay.....			1	20	731	71	36	52	1,603	19.96
Amboas Camarines.....			2	24	709	42	13	59	2,176	31.99
Antique.....	6			45	439	2	1	37	674	31.18
Bataan.....				9	130	11			378	20.41
Batanes.....				10	7	2			33	12.89
Batangas.....				127	608	42	17	82	1,278	17.55
Bohol.....	1		1	109	408	56	53	87	800	16.11
Bulacan.....	10			110	941	15	141	7	2,438	32.85
Cagayan.....			1		351	26	3	10	558	15.30
Capiz.....	7			151	727	9	1	143	1,473	32.48
Cavite.....				25	250	17	18	14	821	15.14
Cebu.....				189	902	108	11	207	2,271	18.45
Iloilo.....			1	53	1,477	63	38	112	3,284	19.93
Ilocos Norte.....		5		18	232	34	4	30	731	16.55
Ilocos Sur.....				25	455	9	110	11	1,108	20.47
Isabela.....				14	211	16	6	51	427	12.13
Laguna.....			1	123	560	17	25	21	1,204	20.29
La Union.....	22		2	20	297	4	1	47	468	19.18
Leyte.....		23	1	190	1,122	129	25	313	2,981	27.10
Mindoro.....				10	222				284	18.90
Mountain Province.....				4	160	5	36		394	17.19
Nueva Ecija.....				2	477	31	5	12	664	16.22
Nueva Vizcaya.....				5	90	2			103	12.20
Occidental Negros.....	8	5	2	63	1,021	46	4	68	3,598	35.96
Oriental Negros.....			1		308	3	11	230	1,399	35.67
Palawan.....										
Pampanga.....			1	46	647	19	136	31	3,598	50.31
Pangasinan.....			1	122	1,476	80	221	60	2,145	17.28
Rizal.....				50	415	100	25	48	1,284	20.09
Romblon.....			4	22	93	10		2	309	27.88
Samar.....	5	201	3	157	234	48	24	111	1,254	22.84
Sorsogon.....				188	342	80	13	37	906	18.70
Tarlac.....			1	58	412	18	21	63	673	18.10
Tayabas.....		6	14	99	702	42	23	73	1,341	20.46
Zambales.....				56	288		48	13	443	19.99
Total.....	59	240	38	2,144	17,411	1,147	1,073	2,104	40,573	22.63

TABLE G-a.—Summary of deaths caused by communicable diseases, during the year 1917.

Provinces.	Anthrax.	Dysentery.	Cholera.	Cerebro-spinal meningitis.	Diphtheria.	Influenza.	Glanders.	Hook worm.	Leprosy.	Measles.	Rabies.
Albay	2	87	363						1	9	
Ambos Camarines		356	27		5					3	
Antique		55	355	1						71	
Bataan		4								4	
Batanes		231								27	
Batangas		24	864	4	4	11				23	1
Bohol	2	95	2	1	5	4			1	7	7
Bulacan	2	482				26				92	5
Cagayan	2	330	301			214	2			64	
Capiz	2	174	26	1	7				1	4	
Cavite	42	141	611		10	293	1	66	2	49	3
Cebu	10	98	871	8	17		4	101	1	65	3
Iloilo		699		9						1	3
Ilocos Norte		452								8	
Ilocos Sur	1	248		7		6		2		119	
Isabela		100		5	3					3	3
Laguna		179		7	1	6	1		1		
La Union	56	280	1,350	23	3					24	4
Leyte		60	17						1	8	1
Mindoro	1	63		19		10		4		129	2
Mountain Province	5	480			4						
Nueva Ecija		6								58	1
Nueva Vizcaya	6	1,121			3	129			1		2
Occidental Negros	9	249	206						1	3	
Oriental Negros											
Palawan											
Pampanga	2	73				15				30	2
Pangasinan	19	131		4	2	20	1	1	1	10	7
Rizal	2	100	1		3			26		3	2
Romblon		10	49							3	
Samar	1	679						8	1	4	5
Sorsogon	1	97	429		1	19				113	4
Tarlac	1	265								54	2
Tayabas	5	117	86	2	4		1	11	2	7	1
Zambales										2	
Total	174	7,496	6,776	96	72	753	11	239	24	1,098	56

TABLE G-a.—Summary of deaths caused by communicable diseases, during the year 1917—Continued.

Provinces.	Scarlatina.	Smallpox.	Syphilis.	Typhoid fever.	Tuberculosis of the lungs.	Tuberculosis of other organs.	Tetanus.	Whooping cough.	Total.	Rate compared with total mortality.
Albay.....	2		1	15	703	80	51	28	1,255	19.83
Ambos Camarines.....	1			29	607	43	6	42	855	17.94
Antique.....				47	592	4	2	57	1,484	43.96
Bataan.....				6	104	9			179	11.53
Batanes.....				15	6	2		4	32	14.68
Batangas.....	3		2	75	624	43	30	83	1,118	14.69
Bohol.....	1		9	238	451	111	43	126	1,929	24.40
Bulacan.....				209	997	65	97	4	1,499	23.35
Cagayan.....				1	411	7	33	34	1,093	20.41
Capiz.....				251	984	9	6	330	2,491	41.02
Cavite.....			1	26	306	16	25	9	598	12.39
Cebu.....				237	1,156	111	28	290	3,035	19.96
Iloilo.....	1			59	675	112	122	90	2,238	19.68
Ilocos Norte.....				26	344	50	7	37	1,176	15.33
Ilocos Sur.....				23	562	10	104	44	1,203	19.52
Isabela.....			1	27	236	12	9	37	1,705	23.39
Laguna.....			3	112	440	19	23		713	13.48
La Union.....		4		27	304			70	605	19.45
Leyte.....		1	4	959	1,227	80	23	323	4,381	35.57
Mindoro.....				15	193		11	1	332	20.09
Mountain Province.....				4	95	60	47		307	10.62
Nueva Ecija.....		4		155	475	25	35	16	1,350	28.19
Nueva Vizcaya.....				5	63	1			76	98
Occidental Negros.....		4	1	108	1,054	112	19	91	3,269	46.18
Oriental Negros.....	3	48		139	456	3	8	277	1,404	24.67
Palaan.....										
Pampanga.....				44	680	29	170	32	1,078	1.55
Pangasinan.....		1	3	121	1,474	91	289	52	2,227	17.66
Rizal.....			1	54	514	75	50	25	856	16.02
Romblon.....				5	209	5	3	6	300	28.56
Samar.....		232		25	25	44	56	191	2,189	32.11
Sorsogon.....	1	39	111	245	441	92	8	100	1,699	33.08
Tarlac.....				78	419	6	25	21	1,885	19.80
Tayabas.....	1		3	60	770	60	19	38	1,178	19.60
Zambales.....				14	285		28	27	1,356	22.83
Total.....	13	334	139	3,733	17,882	1,986	1,380	2,488	44,750	22.88

TABLE G-b.—Summary of deaths caused by communicable diseases, during the year 1918.

Provinces.	Anthrax.	Dysentery.	Cerebro-spinal meningitis.	Diphtheria.	Glanders.	Hook-worm.	Leprosy.	Measles.	Rabies.	Scarlatina.	Syphilis.
Albay.....		152					1	3	4	7	2
Ambo Camarines.....	2	382						1	13	1	4
Antique.....		87	1					3			
Bataan.....		2						23			
Batanes.....		298		1			1	8		5	
Batangas.....		19	3					11	2	2	20
Bohol.....	9	274	12	2				44	3		7
Bulacan.....	10	252						9	1		
Cagayan.....	26	333						92			
Capiz.....		204						19		1	
Cavite.....	11	232	2	3		25	2	91	1		2
Cebu.....	21	2,133	5	38		230	2	156	2		231
Iloilo.....		73					1	1	2		
Ilocos Norte.....		212						3	1		
Ilocos Sur.....		120	1	1		1			2	1	2
Isabela.....		195	1	5	2						
Laguna.....		314	17			1		17			
La Union.....	7	34						24			6
Leyte.....	7	33		1			3	2			10
Mindoro.....	4	29					1	6	1		3
Mountain Province.....	2	227	2			37	1	12	2		3
Nueva Ecija.....	3	13		4				31			
Nueva Vizcaya.....		1,402	5	6					1		2
Occidental Negros.....	9	42		1							
Oriental Negros.....	9								1		
Palawan.....											
Pampanga.....	3	208						60			
Pangasinan.....	10	487		3			1	23	15	1	3
Rizal.....		395		1				34	3		
Romblon.....		104									
Samar.....		343		2		6	7	12		3	2
Sorsogon.....		172	1	1	8			14	5	3	2
Tarlac.....		89				13		9	5		
Tayabas.....	2	113	8	3	4			20			
Zambales.....	1							9		26	
Total.....	143	8,973	58	72	14	316	30	739	64	50	299

TABLE G-b.—Summary of deaths caused by communicable diseases, during the year 1918—Continued.

Provinces.	Typhoid.	Tuberculosis of the lungs.	Tuberculosis of the organs.	Tetanus.	Whooping cough.	Cholera.	Smallpox.	Influenza.	Total.	Rate per cent compared with total mortality.
Albay.....	81	823	79	65	8	1	.....	4,074	5,148	43.23
Ambo Camarines.....	111	804	67	5	45	.....	123	2,413	3,741	40.54
Antique.....	.....	565	4	2	48	7	106	3,885	5,002	89.49
Bataan.....	23	179	22	.....	.....	33	383	579	1,330	32.91
Batanes.....	3	4	11	1	3	.....	84	.....	108	37.89
Batangas.....	154	193	51	50	42	401	374	2,282	3,860	26.85
Bohol.....	297	666	124	87	293	1,080	22	3,382	3,017	26.99
Bulacan.....	232	1,028	121	148	7	53	1,062	2,894	5,897	43.10
Cagayan.....	.....	480	25	92	18	.....	.....	1,566	2,389	29.09
Capiz.....	170	720	34	24	122	214	.....	1,607	3,342	37.93
Cavite.....	37	422	13	31	3	250	1,002	1,456	3,421	32.04
Cebu.....	.....	1,442	229	83	286	467	2,167	1,560	6,510	28.91
Iloilo.....	113	2,020	112	70	61	413	.....	4,724	10,326	52.99
Ilocos Norte.....	13	562	13	5	6	.....	283	1,959	2,923	38.50
Ilocos Sur.....	22	753	11	81	3	18	246	1,767	3,113	34.72
Isabela.....	2	279	9	2	50	.....	6	1,093	1,568	38.38
Laguna.....	110	557	24	16	5	36	1,559	1,761	4,276	36.86
Leyte.....	833	493	211	13	174	129	1,672	1,783	2,679	48.12
Mindoro.....	40	128	.....	26	2	15	.....	1,351	4,951	54.76
Mountain Province.....	11	133	.....	33	2	.....	14	720	995	43.11
Nueva Ecija.....	302	52	84	.....	6	.....	26	2,526	2,907	50.28
Nueva Vizcaya.....	31	.....	.....	.....	2	.....	162	3,308	4,214	47.11
Oriental Negros.....	100	1,115	9	.....	.....	.....	62	1,470	1,587	53.99
Palawan.....	30	229	135	5	67	150	.....	3,940	6,968	41.30
Pampanga.....	44	1,066	21	10	151	206	48	1,737	2,465	36.60
Pangasinan.....	87	2,149	99	136	49	8	.....	1,463	5,578	41.10
Rizal.....	37	292	.....	328	44	880	530	7,907	12,537	46.91
Romblon.....	42	149	7	.....	44	99	3,137	1,510	5,572	38.88
Samar.....	170	272	41	74	172	.....	125	124	1,451	26.43
Sorsogon.....	297	606	15	.....	.....	1	163	132	1,400	25.17
Tarlac.....	235	340	16	13	58	121	.....	1,499	2,815	38.65
Tayabas.....	95	1,153	22	34	24	5	.....	2,072	2,823	40.04
Zambales.....	26	336	.....	7	85	68	648	1,694	3,953	35.27
.....	.....	.....	.....	.....	4	.....	22	1,168	1,599	55.09
Total.....	3,817	20,498	1,691	1,400	1,882	4,647	14,092	71,243	130,028	40.78

with the total mortality from communicable and preventable causes, it is very apparent that the toll of death from this disease causes a relatively very low percentage as demonstrated by the following: 7.20 per cent against 14.47 per cent for 1916; and 16.80 per cent for 1917.

It is proper to state that in this report all deaths caused by mucoid and bloody stools have been compiled together irrespective of their etiological origin for the reason that despite the considerable efforts of this office to collect data specifying the amoebic from the bacillary form, returns received from the health stations in the provinces have failed to clearly state these different classes of dysentery. It may be, nevertheless, assumed that in nearly 90 per cent of all deaths from dysentery in the provinces they are of the bacillary type. Conditions favoring the spread of this disease are chiefly the faulty sanitation of most barrios and poblaciones throughout the provinces, particularly as regards sewage disposal and drinking water, as well as unhygienic habits of the people of eating with their fingers and improper handling of food.

It is hoped that the deaths rate from this disease will gradually be lowered, when the conditions as pointed out above are remedied.

Measles.—Measles have never been widely epidemic in the provinces during the year as only 739 deaths have been reported in the provinces comprised in the Division against 683 deaths from the same disease in 1916 and 1,098 in 1917. The specific deaths rate percentage from this cause during the present year as compared with that of the last two mentioned years is as follows: 0.23 per cent as compared with 0.38 per cent in 1916 and 0.56 per cent in 1917. The death rate if compared with the total mortality from preventable causes is as follows: 16.07 per cent in 1916; 2.46 per cent in 1917, and 0.59 per cent for this year. From the above figures it may be inferred that measles is decreasing each year to the extent that it will probably no longer constitute one of the chief causes of mortality among the communicable and preventable.

Typhoid.—During the year, 3,817 deaths from typhoid have been reported in various provinces comprised in this Division against 2,144 registered in 1916 and 3,733 in 1917, with the following specific death-rate as compared with the total mortality of 1.10 per cent in 1918; 1.18 per cent in 1916, and 1.91 per cent in 1917.

The percentage of mortality as compared with the total mor-

talities from communicable and preventable causes is apparently showing gradual decrease as may be seen from the following; in 1916, 5.20 per cent; in 1917, 8.36 per cent; and in 1918, 3.06 per cent.

Tuberculosis.—By the study of Tables G, G-a and G-b it can be observed that deaths from tuberculosis are increasing from year to year and are more than those that occurred from dysentery, cholera and typhoid altogether. The incidence rate from tuberculosis is due to many causes, the most important ones of which will be treated upon in order to show the measures which should be taken against the disease.

Preconceived prejudices constitute one of the principal causes of the propagation of tuberculosis. The wrong idea that people have in regard to isolation and other preventive measures which should be taken with a patient who is suffering from tuberculosis makes this disease easily propagated from year to year. It is very common in the Philippines to hear that either some locality or such a spring are excellent for the cure of tuberculosis. As a general rule, these places or sanatoria which may be called rural sanatoria established by popular belief, are usually located in places where there are no accommodation facilities. The patient usually boards in a house located in such a place, paying a moderate rate to the owner of the house. As commonly happens, the people in such cases have hardly anything in the way of kitchen utensils, and other utensils to be exclusively used by the patient, and the result is that the same utensils used by the tuberculous person are also used and handled by the rest of the family living with him. No precautions against the disease are taken by him or by his housemates, and if he does not succumb to the disease, the length of the time of his stay in the house becomes unendurable to him and compels him to abandon the house to look for another place where he is surely going to spread the disease, after having contaminated one or more individuals of the family with which he was living. The overcrowding on account of the high cost of rental of dwelling houses is another of the chief causes of the propagation of the disease. So long as there is a place for a bamboo bed (lancape), large enough for a family to live in, it is regarded as fit for their residence.

It is a common sight to see a whole family with several children sleeping on one bamboo bed. There are small "shacks" in which not only the purifying rays of the sun but even the diffused day-light do not penetrate, surrounded by dumps and filthy places which are the most suitable locations for the propagation of tuberculosis micro-organisms.

A visit to these filthy "shacks" will disclose the stigma of this terrible disease upon the faces of the small children. Oftentimes when making house-visits and whenever the isolation of the tuberculous child is strongly recommended to the parents so as to prevent it from infecting the others, their answer would be: "Oh, doctor! you are giving us an impracticable advice as this small room is all that we possess to sleep in." So the sick child must sleep with the others. And in some of these "shacks" there are from five to seven children.

Another important factor in the propagation of the disease is the ignorance of the great majority of the lower classes of people, which at times constitutes rather a real prejudice.

Considering the above-mentioned factors with reference to the propagation of this disease, and some others that may be mentioned, an effective antituberculosis campaign should cover the following point:

First. *Early detection of cases and a study of the problems involved in the control of the disease.*

(a) Report and registration of all cases found (tuberculosis census), (b) home visits, (c) facilities for an early diagnosis of cases, (d) antituberculosis education.

Second. *Proper care of known cases which comprises, viz: (a) medical attendance, (b) social welfare.*

Third. *Segregation in Government controlled colonies.*

Fourth. *A more rigid enforcement of the building ordinances in the crowded centers, to the end that each and every habitation will have sufficient space around it to permit the free entrance of sunlight and circulation of air.*

Fifth. *An educational campaign, to do away with the present custom of keeping windows closed, day and night.*

In order to prevent tuberculosis, education must begin in childhood as this is the only way of preventing all sorts of prejudices, social troubles and evils which oftentimes are responsible for the appearance of tuberculosis.

The purpose of the tuberculosis census is simply to have accurate information as to the actual extension and distribution of tuberculosis in the Philippines.

House visits to patients are of urgent necessity at least in those cases where patients cannot afford the attendance of a doctor, this being the only way to study all factors related to every particular case.

An early diagnosis of tuberculosis will not only permit the treatment of a case with better results, but also will prevent

TABLE H.—*Tabulation showing outbreak of cholera.*

Provinces.	Months.																							
	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Albay																							1	1
Ambos Camarines																								
Antique			4	4																	3			
Bataan																					25	18	16	15
Bulacan																		6	4	24	15	9	7	42
Batangas																				306	235	153	44	33
Bohol	154	125	208	159	179	139	98	73	8	6	47	30	185	102	156	111	214	154	214	154	41	26	2	1
Cavite																	4	3	82	59	95	68	111	89
Cagayan																								
Cebu	53	28	19	10	23	14	24	15	46	23	85	44	125	81	266	156	57	36	33	18	63	36	11	6
Capiz	95	78	112	95	15	13	14	11															18	17
Iloilo	69	65	72	70	2	2														73	64	144	127	99
Ilocos Norte																								
Ilocos Sur																								
Isabela																								
La Union																								
Leyte			38	43	12	5	36	19	73	38	4	4			17	9	14	11						
Laguna																								
Mindoro																								
Mountain Province																								
Nueva Ecija																								
Nueva Vizcaya																								
Occidental Negros	94	48	80	87	49	41																		
Oriental Negros	10	10	3	3	9	4			1	1	49	41	56	35	41	33	36	25	33	21	31	22	9	11
Palawan																								
Pampanga																								
Pangasinan																								
Rizal																								
Romblon																								
Samar																								
Sorsogon																								
Tarlac																								
Tayabas																								
Zambales																								
Batanes																								
Total	475	354	536	441	289	218	172	118	176	89	226	140	379	220	620	362	384	269	989	725	1,263	1,049	791	620

TABLE H.—*Tabulation showing outbreak of cholera—Continued.*

Provinces.	Total.		Population.	Rate of incidence per 1,000.	Hospitals or isolation houses established.	Cases hospitalized.		Rate (per cent) of mortality.	
	Cases.	Deaths.				C.	D.	In hospitals.	Outside of hospitals.
Albay	1	1	258,769	0.005					100.00
Ambos Camarines			257,589						
Antique	7	7	140,547	0.04					100.00
Bataan	41	33	47,728	0.86					
Bulacan	81	53	255,653	0.32					74.57
Batangas	505	401	360,521	1.40	1	22	9	40.90	80.00
Bohol	1,080	1,080	366,678	4.10	1	5	1	20.00	71.71
Cavite	292	219	139,632	2.09	1	17	10	58.83	76.00
Cagayan			162,507						
Cebu	805	467	928,963	0.86					58.01
Capiz	254	214	227,659	1.11					84.25
Iloilo	459	413	465,307	0.98	1	33	25	75.75	91.08
Ilocos Norte			229,248						
Ilocos Sur	23	18	301,409	0.07					78.26
Isabela			61,028						
La Union	28	18	139,898	0.19					64.28
Leyte	194	129	600,076	0.32					66.49
Laguna	48	36	165,217	0.29					75.00
Mindoro	11	9	155,551	0.19					81.81
Mountain Province	1	0	151,495	0.009					
Nueva Ecija			138,089						
Nueva Vizcaya			27,240						
Occidental Negros	227	150	308,029	0.73					66.08
Oriental Negros	278	206	195,396	1.42					74.10
Palawan									
Pampanga	9	8	235,004	0.03					88.88
Pangasinan	925	850	465,107	1.38					91.89
Rizal	171	99	157,229	1.09					57.89
Romblon	10	0	59,863	0.17					
Samar			295,584						
Sorsogon	270	121	193,899	1.39					44.81
Tarlac	5	5	181,223	0.02					100.00
Tayabas	89	68	258,107	0.35					76.40
Zambales			61,028						
Batanes			8,690						
Total	6,236	4,605	7,968,767	0.78	4	77	45	58.44	73.52

the contacts from becoming contaminated, hence the necessity for numerous facilities for diagnosis.

Medical attendance may be facilitated by the establishment of charitable institutions, such as free dispensaries, etc., and social welfare may be achieved by promoting the use of a balanced diet, sanitary houses, and proper occupations, etc.

EPIDEMICS.

Cholera.—(See Table H.) Out of the thirty-five provinces comprised in this division, only fifteen have been registering cases of cholera with persistence as may be elicited from the following table.

It may, nevertheless, be assumed that during this year cholera has never been seriously epidemic, as the cases reported were isolated or sporadic, constituting small outbreaks which were easily controlled. The Province of Bohol has been the worst infected, the incidence in this province being 4.10 per thousand population, which is rather too low an incidence to constitute an epidemic. The percentage of mortality has not suffered any changes during this year, if compared with the percentage registered by this disease during past years. This high percentage is due to the fact that the people do not call for a physician during the early stage of the disease, because, as will be seen by the analysis of the above-mentioned table, the cases that were hospitalized have a lower percentage of mortality, this percentage being only 58.44 per cent as against 73.52 per cent which is the percentage among outside cases, notwithstanding the fact that most of these cases have been hospitalized during the precarious stage of the disease. The measures taken for the control of these small outbreaks of cholera were simply the proper observance of the rules and regulations prescribed by the Central Office which may be found in previous annual reports of this Service and by the establishment of provisional emergency hospitals where all cases were isolated. In so far as the incidence is concerned, it may be safely assumed that the occurrence of more or less serious outbreaks of cholera in the provinces shall always be registered inasmuch as proper sewage disposal is not generalized throughout the Islands.

Smallpox.—(See Table H-a.)

The first case of smallpox in the provinces comprised within this division, occurred in the month of February in the Province of Rizal. During the month of March, the Provinces of Bataan, Bulacan, Cavite, Laguna, Nueva Ecija, Pampanga, Pangasinan

TABLE H-a.—*Tabulation showing outbreak of smallpox in the provinces—Continued.*

Provinces.	Total.		Population.	Rate of incidence per 1,000.	Hospitals or isolation houses established.	Cases hospitalized.		Rate (per cent) of mortality.	
	C.	D.				C.	D.	In hospitals.	Outside of hospitals.
Albay	0	0	268,769	2.68	Number.				
Ambos Camarines	692	123	257,589	2.68					17.25
Antique	2,411	106	140,547	2.92					25.78
Bataan	917	383	47,728	19.21	6	667	282	42.27	40.40
Batanes			8,390						
Bulacan	1,943	1,062	255,653	7.60	1	76	22	28.94	55.70
Batangas	1,321	374	360,521	3.66	8	198	43	21.71	29.49
Bohol	95	22	366,678	0.26					23.15
Cavite	1,817	1,002	139,632	13.01	6	167	53	31.73	57.51
Cagayan	5	5	162,507	0.003					100.00
Cebu	4,192	2,167	928,963	4.51					51.68
Capiz			227,659						
Iloilo			465,307						
Ilocos Norte	1,255	283	229,248	5.47	10	807	191	23.66	20.53
Ilocos Sur	1,085	246	301,409	3.59					22.67
La Union	15	15	439,898	0.35					30.00
Leyte	3,716	1,672	600,076	6.19	2	170	21	12.35	46.55
Laguna	3,173	1,559	165,217	19.25	5	118	92	77.96	47.93
Marikina	87	14	55,551	1.56					16.09
Mountain Province	67	26	191,495	0.34					38.80
Nueva Ecija	378	162	138,089	2.73					42.85
Nueva Vizcaya	119	62	27,240	4.86	4	119	62	51.66	
Occidental Negros			308,029						
Oriental Negros	283	48	195,396	1.44					16.96
Palawan									
Pampanga	523	210	235,004	2.23					40.15
Pangasinan	1,896	530	465,107	4.07					27.95
Rizal	6,063	3,157	157,229	38.56	12	3,639	1,527	41.96	67.24
Romblon	74	25	59,863	1.23					35.13
Samar	520	163	295,584	1.75		13	3	23.07	31.55
Sorsogon			193,899						
Tarlac			181,223						
Tayabas	1,646	648	258,107	6.37	3	171	40	23.39	41.23
Isabela	26	6	79,895	0.32					23.07
Zambales	90	22	61,028	1.47					24.24
Total	33,089	14,092	7,968,767	4.15	57	6,145	2,336	38.00	41.60

and Tayabas were also invaded by the disease. During April Batangas, Ilocos Norte and Ilocos Sur reported cases. During May the Provinces of Mindoro, Nueva Vizcaya, Romblon and Zambales were invaded, and in June the Provinces of Antique, Cebu, Capiz and Bohol, and since August it may be said that the epidemic of smallpox was present in practically all the Provinces of the Archipelago. The original source of the epidemic was formed in the city of Manila, and from this city as a center; it invaded the provinces surrounding the city by concentric circles, thus visiting the provinces of Central Luzon and later spreading towards the north and south of the Archipelago.

Thirty-three thousand eighty-nine cases with 14,092 deaths were the toll which the population comprised within this division has paid to the epidemic, resulting in an incidence of 4.15 per thousand, the Province of Rizal being the one contributing the largest share to the epidemic with 38.56 per thousand of incidence. The general average of mortality from smallpox has been 41.60 per cent among unhospitalized cases and 38 per cent among hospitalized, the Province of Rizal also recording the highest mortality, 67.24 per cent.

It has not been possible to secure statistics of cases by ages, not even a fairly accurate one; but it may be assumed, basing our assumption upon the personal inspections made by this division, that about 75 per cent of all cases registered were children under nine years of age.

The cause to which the appearance of the epidemic of smallpox during this year may be attributed is that the extreme confidence, on the part of the sanitary personnel, in the immunity rendered by the systematic and general vaccination ending in the year 1910, which apparently led it to abandon the scientific vaccination that they should have carried out during the following years; and also to the fact that the parents of children also shared equally in this confidence to the extent that they practically encouraged the hiding of their children from the vaccinators whenever they requested the parents to have their children vaccinated. This wrong belief was undoubtedly due to the extreme confidence that they had in the assumption that the Archipelago was entirely free from smallpox. This fact is proved by the inspection of the school children during the epidemic, which showed that no cases of smallpox had been registered among them on account of the yearly vaccinations of school children which had been strictly enforced by the school authorities.

Both virulent and mild smallpox types of the disease have been present during the epidemic. All cases of hemorrhagic type were fatal. Mild cases occurred among those unvaccinated and sometimes among those with vaccination scars, but in the latter the form was generally discrete smallpox or mild varioloid.

Short incubation periods have been registered in some cases. In the municipality of Binangonan, Province of Rizal, and in the municipality of Dingras, Ilocos Norte, and in Bacoar, Cavite, children five days old living in contact with smallpox cases have died from confluent smallpox, not having contracted it from their mothers either during pregnancy or post partum. But the shortest incubation period outside of these special cases is given as ten days.

The method of infection most generally recognized was by contact infection, by carriers and by living in infected houses.

The unhygienic conditions of the rural people, the promiscuous visiting, the concealment of cases, the delayed reporting, and the moving of persons suffering from smallpox from town to town were the principal factors in spreading the disease.

The measures taken to control smallpox were the maintenance of the houses infected under quarantine or the establishment of emergency hospitals or isolation camps for the patients, a compulsory intensive and extensive vaccination and the disinfection of premises and fomites.

Influenza.—(See Table H-c.)

The influenza epidemic, though not recognized as such at first, made its appearance in the Islands between the middle of April and the first week of May, because an increase was noted about this time in the number of deaths from respiratory diseases with a duration of but from five to twelve days, but which were diagnosed, however, as pneumonia, broncho-pneumonia, pulmonary tuberculosis, and even as typhoid fever, beriberi and malaria.

The epidemic was clearly and frankly recognized, though, as such toward the last week of June and throughout July in the provinces near Manila, affecting more than 40 per cent of the population, but attended with very slight mortality, if any. The recrudescence of the epidemic during October proved of a more serious character, greater mortality having been noted in this instance.

It is impossible to determine exactly just where the disease gained entrance but a study of the schedule of the movements of boats in Philippine ports leads to the belief that the epidemic was of autochthonous origin, and that the causative microor-

ganism acquired virulence through repeated and rapid passage from individuals to individuals in a year when the increased volume of traffic and business in the whole country brought about continuous coming and going of vast numbers of people from one point to another, and likewise through the importation of other strains of microorganisms of similar nature which increased the virulence of the native strains upon meeting on common ground. Such is also the case with regard to the course taken by the epidemic since October as may be seen in Table H-c. From this table it may be seen that the disease spread along the highways of commerce and traffic, invading first the provinces of easier access and those of poor transportation facilities last.

The epidemic in the provinces should be viewed in the light of two phases rather than two distinct outbreaks, the first occurring during the months of May and June in the Provinces of Bataan, Bulacan, Batangas, Rizal, Laguna, Tayabas, Pampanga, and Nueva Ecija, and the second breaking out in October, leaving no locality, town or hamlet unscathed, no matter how far or isolated. The incidence of cases during the first phase was great but was attended with very slight mortality; that of the second was characterized, however, with a larger mortality percentage.

The disease showed a preference for the age groups between 10 and 29 years and it is amongst these groups of patients where the greatest degree of mortality was encountered. It was impossible to secure the exact number of cases. Notwithstanding the popular conception which gives an incidence rate of 80 per cent for the total population, the perusal of mortality statistics in several provinces tends to show that only 45 per cent of the population of the provinces under this division suffered from influenza with a mortality rate of from 2.50 to 3 per cent. Most of the deaths were caused by respiratory, cardiac and renal complications.

The epidemic spread in accordance with the immutable laws that govern epidemics, especially those of respiratory infection. The disease was propagated not only through direct contact with the sick but also through the medium of ambulant cases and carriers. It is possible that dust had also something to do with the diffusion of the malady for despite the fact that the specific cause of influenza has little resistance to desiccation, the epidemic during October, November and December spread so rapidly as to preclude the possibility of the sick or carriers passing the disease to others through contact.

The district health officers in provinces affected by the epidemic agree on one point: That a previous attack during the epidemic in May and June conferred immunity against the epidemic later in the year.

The measures taken against the epidemic were of the same nature as those taken in other countries, such as; instruction to the public regarding personal prophylaxis; measures for collective prophylaxis; treatment of the sick at their homes and in hospitals. However, the fact that a great many of the medical officers and subordinate personnel of the health service became sick themselves made the lack of physicians and nurses more acutely felt. Schools and places of amusement were closed in certain provinces, but as to the efficacy of these measures conclusions may be drawn from what the district health officer of Tayabas has to say in the premises:

Notwithstanding the fact that the first cases were hospitalized and placed under the direct supervision of the health service, the diffusion of the epidemic was so rapid and astonishing that in less than one week it had extended to all the towns comprised within the district . . . The results obtained failed to meet the expectations of the measures taken, viz: isolation of the sick whenever possible; disinfection of infected premises; contacts and sputum of the sick; hospitalization, popular lectures, and direct instruction to the people to escape infection; distribution of pamphlets in Spanish and in the local dialect, etc. The malady followed its own course and maintained throughout the epidemic high diffusibility and extreme infectiousness.

Many other statements to this effect could be transcribed for the sake of argument. But from the above, the fact is established that the measures indicated for this class of epidemics did not generally give the expected results due to the extreme diffusibility of the epidemic. It simply died out when fresh victims were no longer available.

Criticisms of the most virulent character were launched against the Philippine Health Service apropos of the epidemic, but the measures taken, as a whole, by the Service to combat the malady corresponded with those taken in other countries. The trouble was that the Service had to face a disease with which it was almost impossible to fight from an epidemiological standpoint. The apparent shortcomings should have been viewed with a little charity, and the officials and organizations entrusted to look after the public health not held responsible for biologic phenomena which they were powerless to stop.

The following is a summary of the conclusions drawn with regard to the last influenza epidemic:

First. The epidemic that raged from May to July was the grieppe, also so-called influenza or *trancazo*.

Second. The disease had a preference for the age groups between 10 and 29 years.

Third. The epidemic of October was merely a recrudescence and a continuation of the May to June epidemic.

Fourth. An attack of influenza during the first period of the epidemic conferred immunity against another attack of the second.

Fifth. The epidemic was of autochthonous origin, but the importation of foreign strains increased the virulence of the native strains.

Sixth. Maritime and land quarantines, hospitalization and the closing of schools and places of amusement failed to cut the diffusion of the epidemic short.

MORTALITY FROM COMMUNICABLE DISEASES.

The following table shows the total number of deaths reported during the last three years from all communicable diseases and the percentage as compared with the total deaths.

Year.	Total deaths.	Deaths from communicable diseases.	Percentage compared with the total mortality.
			<i>Per cent.</i>
1916	180,986	40,574	22.41
1917	191,459	44,750	23.29
1918	318,784	130,028	40.93

In discussing this matter, it should be taken into consideration that the majority of the most common diseases considered, and especially the communicable diseases, are preventable, and should a better understanding of their prophylaxis be learned and followed by the people, the deaths from these diseases could be reduced to a minimum.

The number of deaths caused by the most common diseases plus the number of deaths caused by communicable diseases constitute 62.66 per cent of the total mortality for the year 1916; 63.11 per cent for 1917, and 70.64 per cent for 1918. As can be seen, 65 per cent of the total deaths of the population of this Division are easily preventable. Taking this fact into consideration, the general mortality of this division could possibly be reduced to only 20 or 25 per thousand. This result can be obtained only through the open and loyal coöperation of the provincial and municipal authorities and especially of the people in complying with the sanitary rules and regulations recommended by the health officers.

IV.

RABIES.

TABLE I.—*Rabies.*

Provinces.	Number of persons bitten.	Number of persons died.	Serum adminis- tered.
			<i>Complete treat- ment No.</i>
Albay	10	4	6
Ambos Camarines	13	13	3
Antique	2	0	2
Bataan	0	0	0
Bulacan	5	3	4
Batangas	0	0	0
Bohol	2	2	0
Cavite	1	1	0
Cagayan	4	1	2
Cebu	3	0	3
Capiz	3	0	3
Iloilo	54	2	6
Ilocos Norte	11	2	9
Ilocos Sur	0	0	0
La Union	0	0	0
Leyte	0	0	0
Laguna	2	2	2
Mindoro	0	0	0
Misamis	0	0	0
Mountain Province	1	1	0
Nueva Ecija	8	2	6
Nueva Vizcaya	5	0	4
Occidental Negros	1	1	0
Oriental Negros	10	1	0
Palawan	0	0	0
Pampanga	7	1	3
Pangasinan	41	15	18
Rizal	6	3	6
Romblon	0	0	0
Samar	1	0	0
Sorsogon	5	5	0
Tarlac	19	5	5
Tayabas	13	0	13
Zambales	5	0	5
Isabela	2	1	1
Batanes	0	0	0
Total	214	65	82

Rabies persists in many provinces of this division. In 1918 a total of 214 persons were bitten by real or suspected rabid dogs, 65 having died of hydrophobia. Eighty-two persons were treated with antirabic serum. The lack of coöperation on the part of municipal councils in enforcing the regulations issued by the Central Office in accordance with Act No. 2461 regarding the muzzling and keeping of dogs and other animals liable to convey infection, makes it impossible to completely eradicate rabies in the Islands.

Over 25,000 dogs were killed last year by poisoning, but it was impossible to continue killing dogs at this rate during the present year due to the strong opposition of the municipal authorities resulting from the complaints presented by owners of dogs.

In view of the above-mentioned opposition, antirabic serum was furnished extensively to the sanitary personnel in order to systematically use it on any person bitten by any stray dog.

V.

VACCINATION.

TABLE J.—*Tabulation showing vaccination work performed in the provinces during the year 1918.*

Provinces.	Units issued.	Total vaccinations.	Total inspections.	Positives.	Rate per cent.
Albay	90,500	64,749	51,041	36,211	70.94
Ambos Camarines	73,660	71,713	57,863	37,744	65.23
Antique	10,960	23,097	22,015	13,187	59.89
Bataan	52,000	48,322	31,872	15,755	49.43
Batanes	5,000	5,693	2,116	2,002	99.33
Batangas	291,740	170,630	76,692	49,898	68.97
Bohol	15,000	75,095	67,664	39,075	57.75
Bulacan	153,800	123,284	72,162	49,015	67.92
Cagayan	50,440	46,235	37,920	23,193	61.16
Capiz	8,200	17,507	16,088	11,215	69.71
Cavite	130,400	81,171	72,338	43,131	59.62
Cebu	746,100	349,331	294,288	184,328	62.80
Ilocos Norte	141,360	86,319	77,224	39,656	51.35
Ilocos Sur	80,770	70,739	64,036	36,942	57.68
Iloilo	258,980	166,562	79,308	69,295	67.59
Isabela	25,980	9,366	8,749	2,417	27.62
Laguna	301,800	323,912	211,343	136,036	64.36
Leyte	175,000	168,447	102,513	50,102	63.17
Mindoro	46,920	29,638	21,328	18,474	63.17
Mountain Province	51,980	21,397	16,318	7,209	44.17
Nueva Ecija	112,000	67,636	54,470	35,733	65.60
Nueva Vizcaya	12,960	15,142	14,573	10,444	71.66
Occidental Negros	11,000	48,887	43,748	25,462	58.20
Oriental Negros	2,000	15,518	14,948	9,722	65.04
Palawan	8,500	6,512	3,741	2,337	62.48
Pampanga	269,910	299,685	208,726	135,715	60.22
Pangasinan	239,600	215,997	192,617	132,114	68.58
Rizal	353,870	237,652	185,272	117,249	63.28
Romblon	50,780	14,788	9,469	5,439	39.62
Samar	45,080	24,526	13,776	8,397	60.95
Sorsogon	56,000	34,971	23,373	14,383	61.12
Tarlac	41,920	35,163	33,428	21,471	64.20
Tayabas	244,160	195,939	146,704	99,998	68.09
Union	72,010	62,102	51,058	26,649	51.99
Zambales	115,450	57,691	46,938	28,118	59.90
Total	4,318,830	3,285,376	2,425,725	1,533,595	63.22

Four million three hundred eighteen thousand eight hundred thirty units of vaccine virus were furnished throughout the provinces comprising this division with which 3,285,376 persons were vaccinated. Two million four hundred twenty-five thousand seven hundred twenty-five persons were inspected and 1,533,595 were found positive.

From these figures it may be seen that during the year 1918, 47.74 per cent of the total population of the area covered by this report were vaccinated; 63.22 per cent of the people vaccinated were inspected and 25 per cent of those inspected showed positive results, and as many of the persons not inspected might also have resulted positive, it can therefore be deduced that 38.5 per cent were made immune against smallpox.

This work is performed by the sanitary personnel of the health organization assisted by about 225 additional temporary vaccinators appointed as soon as the first cases of smallpox appeared in the provinces.

As soon as the first cases of smallpox were reported, Circulars Q-14, Q-17, and later Q-48 were issued ordering an extensive and intensive vaccination among all the people, especially among those children from 0 to 10 years of age, not school children, attending at the same time to the revaccination of the rest of the people in every barrio.

Many babies suffering from smallpox were concealed and not discovered until the disease was well advanced. In some places the parents objected to vaccination of their children, so that it became necessary to call the assistance of the police. Eliminating this little friction among the people of the barrios, practically, vaccination could be performed easily.

VI.

LABORATORIES.

The work done by provincial laboratories appears in the following table.

TABLE K.—*Laboratory work—Specimens examined during the year 1918.*

Provinces.	Blood.	Urines.	Nasal secre- tions.	Spu- tum.	Feces.	Vagi- nal secre- tions.	Pus.	Total.
Ambos Camarines	30	23	4	43	31			131
Albay								
Antique								
Bataan								
Bulacan	6	46		6	285	134		477
Batangas	368	6	12	29	209	52		673
Bohol								
Cavite								
Cagayan								
Cebu	330	96	3	3	13,645			14,077
Capiz								
Iloilo					160			160
Ilocos Norte								
Ilocos Sur	405	32	9	11	402			859
La Union	(a)	(a)						
Leyte	54	93		7	5		16	175
Laguna	800	800		5	800	468		2,873
Mindoro	16	68	8	3	12			107
Mountain Province	30	32	1	20	104	4	1	192
Nueva Ecija	7	22		3	3	86		121
Nueva Vizcaya	(a)	(a)						
Occidental Negros	4	31		7	25	6		73
Oriental Negros	(a)	(a)						
Palawan								
Pampanga	2	377		3	7			389
Pangasinan	42	42		5	15		16	120
Rizal	(a)	(a)						
Romblon	(a)	(a)						
Samar								
Sorsogon	(a)	(a)						
Tarlac	(a)	(a)						
Tayabas	386	420	311	384	390			1,899
Isabela	33	34	6	14	17			104
Zambales								
Total	2,513	2,122	354	540	16,118	750	33	22,430

^a No laboratory.

No province established laboratories during the year because microscopes were unobtainable either in the United States or in the local market.

No record is available of the work performed by the provincial laboratories during the year 1917, but it may be assumed that the work performed during the present year exceeded that performed during the last year on account of the examination of the 15,000 enlisted men in the Philippine National Guard, federalized in the month of October.

VII.

MEDICAL RELIEF.

One hundred sixty-five more (see following Table L) new free public dispensaries were established during the year, making a total of 562 in operation at the end of the present year.

More than 100,000 patients were attended during the past year, and up to the present 241,385 adults and 142,127 children have enjoyed the benefits of these dispensaries.

The establishment of free dispensaries has acted as an impulsive force in the sanitary work. On more than one occasion the knowledge of the presence of dangerous communicable disease was obtained through a consultation received in the dispensary, and in all cases, surely though slowly, the people are, little by little, thought to understand and seek medical relief, and the confidence that has sprung up between the doctor and the people from such association has resulted in sanitary improvement.

VIII.

INFANT WELFARE.

The following Table M shows the total number of women's clubs, puericultural centers and other institutions scattered throughout the provinces comprising this division whose mission for the salvation of the lives of children is a most commendable one.

All the institutions mentioned in the attached table have been organized with a view to reducing infant mortality. More than 3,000 memberships constitute the institutions organized, but due to the fact that the principal work done during the year by each of these societies was the transaction of their incorporation and organization, it is not possible to establish conclusions in the present year with regard to their efficiency.

TABLE L.—Condensed report of dispensaries.

Provinces.	Public dispensaries.				Consultations.		Treatments.		Operations.		Attendance at residence.		Total.	
	In operation during 1917.	Opened during 1918.	Closed during 1918.	In operation at end of 1918.	Adult.	Infant.	Adult.	Infant.	Adult.	Infant.	Adult.	Infant.	Adult.	Infant.
	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
Albay.....	20	.....	.....	20	3,422	2,668	2,425	2,157	476	191	521	320	10,224	5,336
Ambos Camarines.....	1	.....	.....	1	7,500	5,853	3,276	2,164	2,356	1,985	3,128	2,216	16,260	12,218
Antique.....	1	.....	.....	1	280	20	234	20	15	1	4	.....	533	41
Bataan.....	59	.....	.....	59	10,266	15,701	7,322	5,520	351	236	1,766	965	19,705	22,422
Bulacan.....	21	2	1	22	2,426	1,696	7,322	7,139	5	7	214	88	10,171	8,970
Batangas.....	35	.....	.....	35	2,759	1,360	7,262	967	23	12	5	756	5,549	3,095
Bohol.....	1	.....	.....	1	776	568	93	64	.....	.....	1,513	2,454	2,352	3,086
Cavite.....	2	.....	.....	2	.....	.....	234	.....	.....	.....	.....	.....	234	.....
Cagayan.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cebu.....	29	.....	.....	29	1,432	443	340	189	1	.....	.....	.....	1,773	632
Capiz.....	25	.....	.....	25	7,820	6,055	5,852	5,670	70	51	2,372	577	6,114	12,353
Iloilo.....	25	5	.....	30	11,447	6,825	14,667	7,809	411	155	4,091	2,309	30,616	17,098
Iloos Norte.....	1	.....	.....	1	193	64	39	1	19	1	23	19	274	85
Iloos Sur.....	1	.....	.....	1	1,486	1,627	1,385	1,358	212	217	448	423	3,531	3,535
La Union.....	12	.....	.....	13	2,282	1,250	1,141	1,111	16	10	43	48	389	482
Leyte.....	42	.....	.....	45	3,576	467	1,858	373	152	27	1,059	229	6,645	1,096
Laguna.....	2	.....	.....	2	8	180	3	80	1	10	.....	170	12	.....
Mindoro.....	7	.....	.....	8	136	66	1,048	148	65	48	50	43	1,299	305
Mountain Province.....	19	.....	.....	27	19,168	7,116	34,347	11,332	241	66	2,173	1,317	55,929	19,831
Nueva Ecija.....	14	.....	.....	14	1,150	.....	.....	.....	.....	.....	.....	.....	1,150	.....
Nueva Vizcaya.....	1	.....	.....	1	2,974	774	6,161	2,534	75	63	222	142	9,432	3,513
Occidental Negros.....	24	.....	.....	25	6,022	2,556	3,604	3,931	157	56	3,930	2,158	13,713	8,731
Oriental Negros.....	1	.....	.....	1	.....	.....	1,022	35	.....	.....	.....	.....	1,022	35
Palawan.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pampanga.....	21	.....	.....	21	1,833	1,747	308	240	.....	.....	.....	.....	2,141	1,987
Pangasinan.....	21	.....	.....	45	4,845	1,745	5,026	1,786	128	44	355	196	10,334	3,771
Rizal.....	14	.....	.....	23	1,326	845	652	1,029	59	35	722	664	2,759	2,573
Romblon.....	(a)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Samar.....	2	.....	.....	2	423	227	370	150	57	15	518	190	1,368	582
Sorsogon.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tarlac.....	16	.....	.....	16	2,059	1,056	1,838	878	12	12	621	327	4,530	2,273
Tayabas.....	41	.....	.....	45	2,410	1,266	1,997	942	35	35	1,117	350	5,159	2,601
Isabela.....	6	.....	.....	7	3,768	2,519	3,852	1,809	161	6	217	42	7,498	4,376
Zambales.....	13	.....	.....	13	1,182	56	1,109	53	73	3	.....	.....	2,364	4,112
Batanes.....	1	.....	.....	1	370	51	22	36	.....	.....	.....	.....	2,392	551
Total.....	398	165	1	562	101,339	64,235	109,763	58,585	5,171	3,294	25,112	16,013	241,385	142,127

TABLE M.—*Infant welfare.*

Provinces.	Women's clubs.	Puericul- tural centers.	Mater- nity wards.	Gotas de Leche.	Free dis- pensa- ries.	Baby contests celebrat- ed.	Number of puer- icultural centers submit- ting re- ports as per by laws.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>		
Albay	5						
Ambos Camarines	6						
Antique	1	1	0	0	1		1
Bataan	2						
Batanes	4						
Bulacan	23	23	1		1		2
Bohol	15						
Cavite	1				1		
Batangas	6				3		
Cagayan	7				4	5	
Cebu	17	1	1	1	31	6	
Capiz	1	1			1		
Iloilo	7	7		2	3	2	
Ilocos Norte							
Ilocos Sur	3						
La Union	4	1					
Leyte	1	2					
Laguna	4	2		2	2	2	2
Mindoro		2					
Mountain Province	1		4		5		
Nueva Ecija	6	6		2	4		1
Nueva Vizcaya	5						
Occidental Negros	21	3			1	2	1
Oriental Negros							
Palawan							
Pampanga	4						
Pangasinan	47	2			34	8	
Rizal	9	2		2	2	8	2
Romblon	1						
Samar	4	2		1	3		
Sorsogon	4					1	
Tarlac	8					2	
Tayabas	6	9			6	1	1
Isabela	3						9
Zambales	2				13		
Total	233	64	6	12	115	38	19

It is hoped that for the coming year all these institutions will be able to start their work under the technical direction of the health officers and direct all their efforts toward the protection of infants and a reduction of infant mortality by establishing special infant dispensaries assisted by nurses and by instructing mothers in regard to the care and feeding of infants, etc.

It is needless to state again that infant mortality is one of the biggest problems in the Philippines and that this problem is not only purely sanitary, but also economic and social.

The average annual infant mortality under one year of age in the provinces comprising this division is practically one-third of the total mortality, and if the ages of from 0 to 4 years are considered, it is more than one-half of the total mortality, and this is true in every town. The problem can only be solved to a great extent by making campaigns and giving instructions to the girls attending school, women in factories, etc., with

regard to the care and feeding of infants, protection of pregnant women before and during delivery, sanitation in the houses, etc.

In connection with the work done by women's clubs and other institutions in reducing infant mortality, the district nurses, welfare inspectors, midwives and other similar sanitary employees also do routine work consisting of public lectures in the barrios and personal instruction to mothers and unlicensed midwives, making domiciliary visits, giving instructions dealing with the principal lines of hygiene and care of infants and instructions to unlicensed midwives (intrusas) regarding the aseptic method in caring for a delivery case, compelling each one of them (midwives) to carry the necessary materials aseptically for attending a partum.

Work done by the nurses during the present year.—The following tabulation shows the work done by the district nurses and midwives during the present year.

TABLE O.—*District nurses's activities during the year 1918.*

Provinces.	Abor- tions.	Normal deliv- eries.	Dysto- cias.	Post part- ums.	Infants attend- ed under two years feeding.		Lectures.	
					Breast.	Artifi- cial.	Public.	Pri- vate.
Albay	13	33	3	7			62	152
Ambos Camarines								
Antique	8	20					10	50
Bataan								
Batanes								
Bulacan	57	144	33	44	504	153	71	1,572
Batangas								
Bohol		20	1	1	6	9	141	15
Cavite								
Cagayan								
Cebu	4	668	10	15	618	50		
Capiz	10	18	5	24	14	5	64	176
Iloilo	20	29	4	7	49	31	66	74
Ilocos Norte								
Ilocos Sur			6	1				
Isabela								
La Union								
Leyte								
Laguna	1	4	2	3	185	56	3	100
Mindoro		18	1	54	127	95		242
Mountain Province	4	45	11	3	36	32	117	518
Nueva Ecija	1	7		20	165	10		400
Nueva Vizcaya	2	6	2		5	2	34	32
Occidental Negros	16	51	8	3	240	100	18	385
Oriental Negros								
Palawan								
Pampanga	5	36			278	18	2	90
Pangasinan	2	92	9		1,706		521	5,223
Rizal								
Romblon								
Samar								
Sorsogon								
Tarlac					3	4	14	40
Tayabas	81	1,648	67	551	1,244	72	35	220
Zambales								
Total	224	2,845	57	732	5,130	637	1,158	9,289

The public lectures mentioned in Table O were given to the people in barrios and other distant places. Private lectures were given in house to house visits to pregnant women or mothers with feeding infants.

Table N shows the mortality registered by puerperal state as compared with the work done by the nurses and midwives.

TABLE N.—*Mortality by puerperal state.*

Provinces.	1916	1917	1918
Albay	131	140	190
Ambos Camarines	128	128	187
Antique	44	42	39
Bataan	24	20	28
Batanes	4	1	0
Bulacan	93	72	130
Batangas	139	147	277
Bohol	97	131	133
Cavite	78	51	79
Cagayan	43	39	59
Cebu	152	212	354
Capiz	67	83	128
Iloilo	173	167	226
Ilocos Norte	55	58	72
Ilocos Sur	54	50	79
Isabela	14	19	32
La Union	33	46	35
Leyte	179	265	310
Laguna	86	68	106
Mindoro	18	1	14
Mountain Province	12	14	16
Nueva Ecija	63	69	103
Nueva Vizcaya	15	19	12
Occidental Negros	156	185	167
Oriental Negros	59	85	53
Palawan	8	12	12
Pampanga	119	84	162
Pangasinan	206	158	254
Rizal	62	60	65
Romblon	25	26	42
Samar	97	117	96
Sorsogon	73	98	134
Tarlac	48	79	101
Tayabas	106	115	135
Zambales	24	19	12
Total	2,685	2,880	3,842

It appears that an increase in mortality by puerperal state is inversely related to the greater number of nurses and midwives appointed in 1918 than in 1917 and than in 1916, but the increase in 1918 over 1917 of the mortality by mentioned cause was due to the influenza epidemic and the increase in the year 1917 over 1916 is not so notable that it may constitute a contraposition to the efficiency of the work done by the nurses and midwives, because in the year 1917 the work of the nurses was only begun and the people were not too confident of the instructions given.

IX.

MEDICAL INSPECTION OF SCHOOLS.

The following Table P has been prepared to show the results of medical inspection of schools and pupils.

TABLE P.—*Medical inspection of schools.*

Provinces.	Number of schools in-spected.	Number of pupils in-spected.	Number of schools not in-spected.	Number of pupils not in-spected.	Disposal of excreta.		
					Antipolo system.	Septic tank.	Pail system.
Albay	117	14,539	13	1,614	87		21
Ambos Camarines							
Antique	31	1,416	30	7,333	8		
Bataan							
Batanes	10	1,120					
Bohol	82	7,186	135	12,653	46	2	
Bulacan	93	13,995	41	2,819	82	2	
Batangas	29	4,093	122	13,361	1	2	23
Cavite	4	175		78			4
Cagayan	6	1,300					
Cebu							
Capiz	48	9,690	80	12,249	92	15	61
Iloilo	167	13,686	62	4,059	2	29	32
Ilocos Norte	8	2,748	25	2,566			
Ilocos Sur	90	8,611	23	4,543	13		
Isabela	17	3,575	50	5,287			
La Union	60	9,724	4	2,142	4		
Leyte	105	12,613	56	5,260	11		11
Laguna	6	3,757		15	4	1	
Mindoro							
Misamis							
Mountain Province	56	6,832	34	3,523	6	17	76
Nueva Ecija							
Nueva Vizcaya	27	1,550	4	277			4
Occidental Negros	66	10,487	70	10,990	11		1
Oriental Negros							
Palawan							
Pampanga	63	9,371	32	6,097		4	8
Pangasinan	72	14,396	118	11,663	11	13	16
Rizal	69	6,767	15	3,441	12	15	2
Romblon							
Samar	8	540	4	500	2		
Sorsogon	11	2,999					
Tarlac	78	10,922	30	1,682	2	3	13
Tayabas	72	10,676	23	1,999	9	10	13
Zambales	23	3,865	18	4,000			
Total	1,418	186,233	989	118,151	403	113	280

The total number of schools scattered throughout the Islands has not been inspected due to lack of time and of sanitary personnel.

In making these inspections, however, the work was confined not only to physical examination of school children, but also to verify the sanitary condition of school buildings and toilet facilities.

In regard to sanitation of buildings, it should be stated that many schools, especially the rural ones, were found to have insanitary yards and not a few of them are lacking in toilet facilities.

Due to shortage of proper school buildings, many primary schools are established in houses and places without proper facilities for the purpose.

In regard to the physical examination of school children, (See Table Q) nothing important has been noted. The most important diseases found were dental caries and scabies. With only few exceptions, the diseases found to have appeared have had no influence to any great extent on the health of the pupils.

TABLE Q.—*Medical inspection of schools.*

Provinces.	Pupils inspected.	Diseases found.						Pupils excluded.	Treated.		
		Scabies.	Tonsils.	Conjunctivities.	Pertussis.	Contagious skin diseases.	Contagious eye diseases.		Dental caries.	At dispensaries.	At home.	Total.
Albay	14,539	125	222	67		114	67	1,418	1,325		1,325
Ambos Camarines											
Antique	1,416	326		99		79		240	46		46
Bataan											
Batanes	1,120										
Bulacan	13,995	520	468	10		112	56	4,762	666	1,232	1,232
Batangas	4,093	554	87	61	2	23	13	530	35	922	1,011
Bohol	7,186	693	237	3		119	67	680	45	748	826
Cavite	175	12					1	57	12		
Cagayan	1,300										
Cebu											
Capiz	9,690	25	1	66			29	56	14	162	191
Iloilo	13,686	682	5	21	5	203	30	3,118	228	298	156
Ilocos Norte	2,748	107	10	5	5	6	16	324	100	130	454
Ilocos Sur	8,611	597	402	101		211	4	913		691	130
La Union	9,724	292	262	101		656	145	4,920	62	2	811
Leyte	12,613	820	430	60	7	1,454	53	2,572	499	262	64
Laguna	3,757	103		1				609	104	10	761
Mindoro											13
Mountain Province	6,832	1,350	1	443		1,055	346	713	2,316	1,262	588
Nueva Ecija											1,850
Nueva Vizcaya	1,150	256	1	10				263	263	1	264
Occidental Negros	10,487	832	184	64	5	72	7	1,081	594	1,336	182
Oriental Negros											
Palawan											
Pampanga	9,371	85		28			3	2,129	1,451	377	1,395
Pangasinan	14,396	940	116	41		302	11	1,451	1,781	153	934
Rizal	6,767	375	47	84	19	33	11	32	35	12	47
Romblon											
Samar	540	30	25	28	8	10	60	610	29	998	998
Sorsogon	2,999	164		91		91	42	1,525	8	178	301
Tarlac	10,922	650	3	5	21			1,329	249	253	751
Tayabas	10,676	545	33	12		85	7	1,326	35	239	469
Isabela	3,575	304	64	18	3	14		315	742	1,351	1,351
Zambales	3,865	593	16	78		593	70	375			
Total	186,233	12,517	2,644	1,658	75	5,232	1,087	24,870	18,825	13,954	3,536
											17,490

The great majority of the pupils excluded and found sick were treated, either at their homes or at the dispensaries, and readmitted to the schools after recovery.

X

WATER SUPPLY.

The following Table R shows the sanitary water supply systems used in the provinces, comparing two consecutive years.

Three hundred sixty-one artesian wells were drilled during the year, the Province of Pangasinan being at the head as to the number of artesian wells. Two thousand one hundred-nine artesian wells were in operation at the close of the present year, furnishing about 28,000 gallons per minute, and used by about 2,003,950 persons.

Also 2,706 sanitary wells were dug during the present year, making a total of 34,975 at the close of the year 1918. The other two hundred and twenty-seven systems of water supply consisting of springs, gravity hydrants and rain water collected in containers above ground are also used by the people.

In short it may be concluded that of the 7,968,767 persons who constitute the population of the provinces included in this division, about 3,000,000 or 37 per cent use safe water 2,000,000 or 25 per cent use water with relative safety and the rest use water from rivers or unsafe water.

An estimated amount of ₱600,000 has been appropriated by the municipalities for drilling artesian wells, but due to lack of enough drilling outfits and personnel in the Bureau of Public Works, the total number of artesian wells proposed could not be drilled in the course of the year.

The question of using a safe water supply is a very important matter in relation to health conditions of a province. During cholera epidemics it has been observed that the disease has registered more cases in places where safe water is not available, and the same may be said with reference to the other intestinal diseases. With the extension of drilling more artesian wells or other sanitary systems of water supply, it is expected that the mortality, especially from gastro-intestinal diseases will probably decrease to a minimum rate.

Only 63 markets and 24 slaughterhouses were built during the present year. The small number of markets and slaughterhouses constructed was due to the high cost of materials for construction.

Of the 497 markets existing at the end of the present year, only 150 are of concrete, the rest are of light materials, such as bamboo and wood. Also of the 281 slaughterhouses, only 75 are built of concrete.

TABLE R.—*Water supplies.*

Provinces.	Population.	Artesian wells.				Sanitary dug wells.				Other sanitary systems.			
		Number at end of 1917.	Drilled during 1918.	Total.	Gallons per minute.	Population served.	Number at end of 1917.	Dug during 1918.	Total.	Population served.	Gravity.	Kind.	Gallons per minute.
Albay	268,769	25	.....	25	123.4	27,050	279	154	433	30,650	.....	.....	.....
Ambos Camarines	257,588	52	12	64	136	104,700	113	418	134	52,560	.....	.....	.....
Antique	140,547	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bataan	47,728	121	6	127	707	43,225	.....	.....	.....	.....	.....	.....	(a)
Batanes	8,390	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bulacan	255,653	178	16	194	3,723	144,328	1	.....	1	200	2	1	60
Batangas	360,521	103	3	106	910	160,000	.....	.....	.....	.....	.....	.....	(a)
Bohol	366,678	26	2	28	71	74,683	1,118	44	1,162	258,983	4	3	.....
Cavite	139,632	56	3	59	509	77,310	.....	56	56	26,280	.....	.....	.....
Cebu	928,933	60	34	94	600	235,000	278	.....	278	125,000	.....	.....	.....
Cagayan	162,507	.....	.....	.....	.....	.....	2	2	2	20,000	.....	.....	.....
Capiz	227,659	79	16	95	750	85,616	2,075	.....	2,075	111,701	.....	.....	.....
Iloilo	460,307	27	.....	27	1,100.5	31,145	342	175	517	99,468	.....	.....	.....
Ilocos Norte	229,248	3	6	9	28.5	24,632	7,903	8	7,911	131,042	1	.....	.....
La Union	301,409	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laguna	600,076	3	.....	3	15	1,943	1	.....	1	2,000	.....	.....	.....
Leyte	155,207	4	.....	4	25	12,000	186	68	254	58,260	.....	.....	.....
Mindoro	55,551	116	11	127	3,422	73,008	40	10	50	3,300	.....	.....	1,500
Mountain Province	165,207	8	5	13	120	7,700	19	14	33	14,600	.....	.....	.....
Munoz	191,495	.....	.....	.....	.....	65,289	.....	.....	.....	.....	.....	.....	.....
Nueva Ecija	138,039	93	3	76	8,566	37,758	33	3	36	47,089	.....	.....	.....
Nueva Vizcaya	27,240	19	19	19	.....	8,894	54	22	76	6,313	.....	.....	5,795
Ocidental Negros	308,029	194	38	232	(a)	98,400	.....	.....	.....	.....	.....	.....	.....
Oriental Negros	195,396	3	.....	3	(a)	.....	.....	.....	.....	.....	.....	.....	.....
Pampanga	235,004	271	39	310	1,135	118,200	9,735	.....	9,735	106,402	.....	.....	511
Pangasinan	465,107	79	46	125	3,439	97,520	9,869	1,993	11,862	224,779	.....	.....	103,653
Palawan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rizal	157,229	133	29	162	900	112,152	45	1	46	2,910	.....	.....	3,995
Romblon	59,863	4	.....	4	(a)	13,176	5	.....	5	1,300	.....	.....	10,198
Samar	295,594	2	5	7	(a)	15,500	.....	.....	.....	.....	.....	.....	17,800
Sorsogon	193,899	40	2	42	900	92,239	.....	.....	.....	.....	.....	.....	.....
Tarlac	181,223	76	26	102	(a)	83,082	56	1	57	500	.....	.....	.....
Tayabas	258,107	10	30	40	308	11,259	91	111	202	13,800	2	.....	11,254
Isabela	79,895	4	2	2	40	23,000	24	3	27	12,900	.....	.....	.....
Zambales	61,028	2	2	4	40	15,000	.....	.....	.....	.....	.....	.....	1,354
Total	7,968,767	1,748	361	2,109	27,752.40	2,003,949	32,269	2,706	34,975	1,349,837	9	185	60
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	880,847

^a No report.

TABLE S.—Sanitary markets and slaughtering houses by provinces.

Provinces.	Markets in 1917.			Slaughtering houses in 1917.			Markets built in 1918.			Slaughtering houses built in 1918.		
	Water supply number.	No water supply number.	Total.	Water supply number.	No water supply number.	Total.	Water supply number.	No water supply number.	Total.	Water supply number.	Water supply number.	Total.
Ambos Camarines	1		1	1		1	1		1	1		1
Albay	3	6	9	1	2	3					2	2
Antique	2		2									
Bataan	9	1	10									
Batanga	6	5	11	4	1	5						
Bohol	26	5	31	6	5	11						
Cavite	1	2	3	4	12	16						
Cagayan	1	9	10									
Cebu	12	46	58									
Capiz	38		38	7	12	19						
Iloilo	6	31	37	35		35						
Ilocos Norte	4		4	6	20	26						
Ilocos Sur				4		4						
Isabela	19	4	23	18		18						
La Union	4	1	5	1	1	2						
Leyte	2	3	5	1		1						
Laguna	6	3	9	2	2	4						
Maguindanao	2	3	5	4	4	8						
Mountain Province	1		1									
Nueva Ecija	2	2	4	2	2	4						
Nueva Vizcaya	4	11	15	4	8	12						
Oriental Negros	5	5	10	5		5						
Pampanga	7	31	38	3		3						
Panay	4		4	3	4	7						
Pangasinan	10		10									
Rizal	17	30	47	13	22	35						
Romblon	3	15	18	4	4	8						
Samar	1	3	4	1	1	2						
Sorsogon	4		4									
Tarlac		1	1									
Tayabas	5	4	9	2	3	5						
Zambales	9	3	12	7	2	9						
Batanes	1	6	7	2	2	4						
Total	166	268	434	116	143	257	20	43	63	9	15	24

Ordinarily the sanitary maintenance of public markets and slaughterhouses is placed under the control of the municipal treasurers, who frequently pay little attention to enforcing the cleaning of the above-mentioned buildings.

On market days, sanitary inspectors of the municipalities and also the health officers whenever possible make an inspection of markets to see that sanitary regulations or municipal ordinances with regard to prevention of contamination of foodstuffs are complied with and that the tiendas are provided with food receptacles and a safe water supply.

XII.

DISPOSAL OF EXCRETA.

A circular was sent by the Central Office to all district health officers enclosing a draft of a municipal ordinance for the purpose of introducing throughout the population of the Islands the so-called "Antipolo system" for excreta disposal.

The Antipolo system consists of (a) a covered pit, (b) a seat with a pipe connected to the pit and (c) a ventilating pipe. The capacity of the pit varies; one to accommodate five persons or less should have a capacity of 6 cubic meters ($1\frac{1}{2}$ meters deep by 20 meters square) and another cubic meter should be added for each person in excess of five. If the soil is sandy or soft, the sides of this pit should be lined with concrete, iron, stone, wood, bamboo or other permanent material to prevent slides of the earth into the pit. The top of the pit should be securely covered with concrete, stone wood or bamboo and whenever wood or bamboo is used, it should be covered by at least 15 centimeters of clean earth. The opening in the seat is provided with a cover by which it is closed automatically when not in use. The pipe connecting the seat to the pit is of galvanized iron, vitrified or burned clay, or other permanent material and should have a minimum inside diameter of 20 centimeters. All the joints of the pipe are made impermeable. The ventilating pipe is erected from the pit and the top should be one meter higher than the highest eaves of the houses nearby. A cap of wire screening should be fastened securely over the top of the vent pipe to prevent the entrance or exist of mosquitoes or flies. (See pictures.)

Where the ground is low and became overflowed, the brink of the pit should be elevated above the level of the soil with stones, clay or earth firmly held in place with iron, wood, bamboo or other permanent material.

TABLE T.—*Disposal of excreta by provinces.*

Provinces.	Antipolo system ordinances.		Private.				Public places, including markets, schools, hotels, and municipal buildings.				Tempor- ary sani- tary closets at fiestas.		
	Number of munic- ipalities.		Antipolo system.		Septic tanks.		Antipolo system.		Septic tanks.				
	Ap- proved.	Pending.	1917	1918 ^a	Total.	1917	1918 ^a	Total.	1917	1918 ^a		Total.	
Albay	14		728	12,866	13,594	17	11	28	98	4	128	4	2
Ambos Camarines				441	441						186		
Antique		3		22	22		4	4	15		3		
Bataan													
Bulacan	7	16	178	221	399	50	6	56	85		77	162	
Batangas	2	6	12	6	18	38	17	55	60		23	83	15
Bohol	35		20,004	19,992	39,996	9	9	18	6		2	2	6
Cavite	2	18	1	646	647								
Cagayan													
Cebu													
Capiz	5	3	145	775	920	22		22	56		63	119	
Iloilo	5	14		20	20	69	219	288	3		29	32	30
Ilocos Norte	1	13		4	4				13		17	13	
Ilocos Sur		10		15	15	12		12					
Isabela	2	1				4		4					
La Union	7	2	3	318	321				3		288	291	1
Leyte	26	18	653	21	674	14		14	2		10	12	8
Laguna	17	10	661	184	845	119	48	167	3		30	33	2
Mindoro	2	1	2	28	30				3		2	2	4
Mountain Provinces	2	12				28	18	46	4		6	6	
Nueva Ecija	9	17	187	17	204	6	18	24	5		1	1	3
Nueva Vizcaya													
Occidental Negros	18	6	68	1,279	1,347	73	12	85			21	6	17
Oriental Negros						11	4	15				2	2
Palawan													
Pampanga	4	16	659	101	760	31	3	34					
Pangasinan	21	16	1,430	127	1,557	27	7	34	22		7	29	5
Rizal	16	9	2,255	847	3,102	482	57	539	13		4	17	20
Romblon	3	5		18	18				13		4	12	15
Samar	7	2	4	17	21	10	6	16	2		3	5	50
Sorsogon	3	2	879	51	930	4		4					1
Tarlac	3	3	42	7	49	11		11	2		5	7	6
Tayabas	17	13	4,351	431	4,782	61	19	80	9		8	17	10
Zambales									1		1	2	3
Batanes													2
Total	228	221	32,274	38,454	70,728	1,099	459	1,548	405	41	800	1,202	142
													371

^a New building.

The elevation of the brink should depend upon the locality and it should be high enough so that the pit will not be overflowed. The thickness of the elevated brink, if the material used is earth or clay, should be 50 centimeters to prevent outside water from leaking into the pit.

It is suggested that, if possible, pits be dug to a depth until the water oozes from 3 to 5 inches. When on account of the location of the ground, water does not percolate, the bottom of the pit can be made absorbent by pouring a bucket of water into the pit through the soil pipe occasionally. Water quickens the processes of putrefaction of the excrement without giving rise to offensive smells. Experience has demonstrated that by keeping the parts of this toilet in good repair, the upper part of the pipe connected with the seat constantly clean by scrubbing when necessary, and the bottom of the pit covered with water, this privy will be odorless and its contents will be thoroughly digested. Should the water in the pit, through carelessness or negligence, become a source of mosquito propagation, the nuisance may be remedied by pouring into the pit a sufficient quantity of petroleum, that is, one hundred and fifty (150) cubic centimeters for each square meter of surface.

By using bamboo material and Baliuag pipe, this system of toilet will cost only from 15 to 20 pesos. A regular public Antipolo closet from four to six seats, partitioned for males and females, and with two separate doors, iron roof, wooden walls and concrete or Maycauayan stone tank will cost from ₱250 to ₱300.

A municipal ordinance enforcing the use of the above described system for excreta disposal was submitted to all the municipalities of the provinces embraced by this division, but only 228 have already approved it and 221 are taking it under consideration and study. Although 228 municipalities have approved the sanitary ordinances relative to the disposition of excreta, none of them have enforced it. One main reason why the municipal councils offer objection against its enforcement or do not approve same is that, the cost of the construction of closets is prohibitive for the average poor people. But it is really due also to the fact that while the municipalities do not possess sanitary closets for municipal buildings and other public houses, it would be unfair to impose an ordinance of which the same municipalities are infractors.

It is true that during the present year more Antipolo systems have been constructed in private premises than during the past

year, but comparing the total number existing at the end of the year and adding to it the number of other sanitary systems installed in public places, only 73,620 are established in the provinces embraced by this Division, which are hardly sufficient for the maintenance of a sanitary disposal of excreta of about 8,000,000 population of the provinces included in this Division.

The Philippine Health Service is of the opinion that the so-called Antipolo system for the disposal of excreta is within the reach of all, and the provincial and municipal officers are therefore responsible for the lack of sanitary disposal of excreta among the municipalities due to their negligence in enforcing the municipal ordinances proposed, inasmuch as section 2242 of the Administrative Code contains legislative powers of mandatory character for the municipal councils to pass an ordinance governing the disposal of excreta.

XIII.

CEMETERIES.

Fourty-four Roman Catholic, 12 Philippine Independent, one Protestant, and 78 municipal cemeteries were opened, and 17 Roman Catholic, 1 Philippine Independent, one Protestant, and 8 municipal cemeteries were closed during the year. At the close of the present calendar year, there exist in the provinces embraced by this division 846 Roman Catholic, 140 Philippine Independent, 77 Protestant, and 736 municipal cemeteries, making a total of 1,799 cemeteries. (See following Table U.)

The work of the improvement of cemeteries which was begun last year has been continued during the present year, especially with regard to converting every one of the cemeteries into a beautiful garden. Some of the parish priests have introduced great improvements in their cemeteries, while the same practice is not true with reference to municipal cemeteries which still remain in bad condition, making them a place for pasturing of carabaos, horses and goats.

XIV.

NEW ORDINANCES.

Sanitary ordinances covering the following points were submitted by health officers to the municipal councils in their respective health districts.

- (a) Disposal of excreta.
- (b) Notification and control of communicable diseases.
- (c) Making compulsory the hospitalization of smallpox cases.
- (d) Measures against rabies.

TABLE U.—Number, location and classification.

Provinces.	Cemeteries in operation at the beginning of the year.				Cemeteries opened during the year.				Cemeteries closed during the year.				Cemeteries in operation at the end of the year.				Remarks.
	Roman ca-tholic.	Iglesia Fili-pina Church.	Protestant.	Municipal.	Roman ca-tholic.	Iglesia Fili-pina Church.	Protestant.	Municipal.	Roman ca-tholic.	Iglesia Fili-pina Church.	Protestant.	Municipal.	Roman ca-tholic.	Iglesia Fili-pina Church.	Protestant.	Municipal.	
Albay	28	2	2	8	1			1					29	2	2	8	
Ambo Camarines	40			7									40				
Antique	22	4	7	16									22	4	7	16	
Bataan	14	4		9									14	4		5	
Batagan	23	3	5	23									23	3	5	23	
Batangas	24		3	15									24		3	15	2 private, 1 Chinese.
Bohol	51	9	2	38	10	3		5					56	6	8	15	
Cavite	18	6	8	15									18	6	8	15	
Cagayan	16	7	4	32				3				2	16	7	4	33	
Cebu	81	5	7	16	3			2					84	5	7	16	
Capiz	29	3		13				1					28	4		14	
Iloilo	48	6	7	48	1			1					48	6	7	48	
Ilocos Norte	11	8	2	17				1					11	8	2	18	
Ilocos Sur	35	13	8	27	2	1					1		37	14	7	27	
Isabela	24	11	2	8	4	4		1				2	27	14	2	7	
La Union	12		1	12				1					12			1	
Leyte	64	5		21				4					64	5		25	
Laguna	16	4		29				1					15			30	
Mindoro	18			5									18			5	
Mountain Province	5	4	1	52	4	1		39				1	18	5	1	90	
Nueva Ecija	17	5		28				1					17	6		32	
Nueva Vizcaya	7	2	2	9				1					6	2	2	9	
Occidental Negros	18	4	4	48				2					18	4	4	50	
Oriental Negros		(a)	(a)	(a)	(a)	(a)	(a)	(a)									
Palawan																	
Pampanga	23	1		31	1								24	1		31	5 private.
Pangasinan	40	11	4	39	2			3					41	10	4	42	2 Chinese.
Pangasinan	28	5	2	23	3			1					30	5	2	24	
Rizal	5			14									5			14	
Romblon	21			6	3			1					23			6	
Samar	27		3	15				1					27			18	1 private.
Sorsogon	10	1		21	2			3				3	10	1	0	18	
Tarlac	28	1	2	26									30	1	2	26	
Tayabas	28	1	2	26									30	1	2	26	
Zambales	11	6	1	6				1					11	6	2	7	
Batanes					5			3					5			3	
Total	819	130	77	672	44	12	1	78	17	1	1	8	846	140	77	736	

* No data in the Office of the district health officer.

- (e) Making compulsory the muzzling of dogs.
- (f) Protection of food and drinks.
- (g) Sanitary control of aerated water factories.
- (h) Protection of water supply.
- (i) Sanitary maintenance of barber shops, pansiterias, ca-renderias, and other similar tiendas.
- (j) Sanitary maintenance of premises.
- (k) Sanitary maintenance of stables and dairies.
- (l) Drainage of low lands.
- (m) Slaughter permits.
- (n) Prohibition of spitting in public places.
- (o) Regulating dancing halls and making compulsory the physical examination of dance-hall girls.
- (p) Making compulsory the notification of births.
- (q) Regulating the practice of midwives.

Not all of the municipal sanitary ordinances submitted were approved in all municipalities of the provinces. Only some of them were approved and in only some of the municipalities.

The subjects of the sanitary ordinances submitted are practically the same as those submitted last year, and the reasons why some municipal councils are reluctant to pass the ordinances submitted are the same as those stated in pages 109 and 110 of the Philippine Health Service annual report for the calendar year 1917.

It is self-evident that while sanitary ordinances cannot be enforced by the Central Government, no efficiency will be gained with regard to this point in municipalities.

XV.

SANITARY ORDERS AND PROSECUTIONS.

The following Table V shows the number of sanitary orders issued during the year, the cause for which they were issued, the number of persons prosecuted, and the results obtained from the prosecutions.

The number of persons prosecuted in relation to the number of sanitary orders issued, and also the number of persons prosecuted in relation to the persons sentenced appear to be quite small. This is due to the fact that in some municipalities local officers, instead of showing themselves interested in health matters and coöperating with the health officers, do not pay much attention to this important matter. Although repeated personal conferences were held with some of them in regard to sanitation, no results were obtained. This condition is either

TABLE V.—Sanitary orders issued and persons prosecuted for non-compliance with sanitary orders, regulations, or laws.

Provinces.	Number of sanitary orders issued.	Causes for which issues.							Results.				
		Insanitary premises.	Domestic animals.	Unprotected feed and drink.	Disposal of excreta.	Barber shops.	Dancing halls.	Other infractions.	Number of orders complied with.	Number of persons prosecuted.	Number sentenced to imprisonment.	Admonished.	Acquitted.
Albay	583	187	108	74	92	6	2	114	502	101	56	30	15
Ambos Camarines	181		178	3					178	181	44	137	
Antique													
Bataan	161	1	2	100				58	107	57	27	5	3
Batangas	8,401	5,692	1,077	407	1,225				8,354	47	44		27
Bohol	6,274	1,779	372	498	3,625				6,086	138	48	11	52
Cavite	520	142	16	25	321	13	3		234	3	3		
Cagayan													
Cebu	472	128	295	20	26		3		274	151	151		
Capiz	1,220	437	204	102	352			125	1,092	114	2	122	
Iloilo	6,315	2,395	889	1,210	753	245	10	813	3,068	27	17	2	6
Ilocos Norte	555	16	163	225	131	20			89				
Ilocos Sur	86	42	8	9	18			9	46	64	13	5	4
Isabela	41	13	14	6	8				35	6	6		
Leyte	483	192	77	75	64	1	5	69	267	277	119	35	108
La Union	23	3	3	2	13			4	17	35	19	16	
Laguna	27	6	9	12					27				
Mindoro	268	106	9	12	131			10	124	133	1	2	130
Mountain Province	200	125	15		60				130	140		140	
Nueva Ecija	31	30							31				
Nueva Vizcaya	1,296	736	139	79	315		1	27	1,006	98	40	37	13
Occidental Negros	461	126	70	115	33	12	1	104	349	437	50	63	17
Oriental Negros													
Palawan													
Pampanga	287	101	4	41	82			59	266				
Pangasinan	2,650	1,057	89	146	1,239	7		112	1,850	125	74	23	11
Rizal	2,570	694	485	269	775	27	2	318	1,930	640	291	7	62
Romblon													
Samar	6	3		2	1				3	50	20	30	7
Sorsogon	52	24		1	24		3		52	7			
Tarlac	121	70	7	32	5	3	1	3	114	6	3	1	2
Tayabas	424	149	91	35	120	15	1	13	424	110	26	2	18
Zambales													
Batanes	1		1						1				
Total	33,709	74,228	4,349	3,500	9,413	349	32	1,838	26,476	2,947	1,054	213	200

the result of the indifference of the officials concerned or of political influences. The election for members of the Legislature and provincial and municipal officials to be held in the second quarter of next year will explain this fact.

XVI.

PUBLICITY.

Besides public lectures given by the personnel of the health organization, the number of which may be seen in the following table, lectures which constitute a part of the publicity campaign and other activities have also been carried out for the same purpose to the end that the people may familiarize themselves with sanitary measures, and may understand the importance of sanitation.

The health officers have taken advantage of every opportunity to publish and attract the attention of the people towards health matters. This work has been performed in different ways either by publication of pamphlets, bulletins, conferences, exhibitions, etc., impressing upon the mind of the people the importance of sanitation by making comparative vital statistics or by exhibits which were usually made during town fiestas, garden days, etc. Exhibitions of the Antipolo system of toilet, model house, sanitary water receptacles, pictures, ova of intestinal parasites, mosquitoes, how to avoid malaria, flies as nuisance and vectors of diseases have been made during the present year in almost all the provinces embraced by this Division.

Considering the great importance of this work, this division has directed its activities especially to the greatest possible extension of the publicity campaign.

XVII.

HOME GARDENS.

The following Table Y shows the number of home gardens established during the year.

The campaign for the establishment of home gardens and for the increase of food production has been carried out by the personnel of the health organization with the coöperation of the Bureau of Agriculture, Bureau of Education and the local authorities, as a part of the plan of the Central Government and as a measure to provide food for the World war.

In order to obtain the greatest possible success in this cam-

TABLE X.—*Publicity campaign.*

Provinces.	Lectures given.										Number of people attending the lec- tures.
	In schools.			In barrios.			In other places.				
	D. H. O. ^a	P. S. D. ^b	D. N. ^c	D. H. O. ^a	P. S. D. ^b	D. N. ^c	D. H. O. ^a	P. S. D. ^b	D. N. ^c		
Albay		76	246			48	161		27	57	16, 400
Ambos Camarines											7, 430
Antique	19			41				4			
Bataan	4										4, 824
Batangas	1	13		7	35		48	9	18	4	17, 320
Bulacan	123	88	80	49	165		38		36		12, 312
Bohol	9	4		8	8			7	9		5, 970
Cavite		13									4, 000
Cagayan											
Cebu	31	69	78	12	35		87	11	34	75	14, 420
Capiz	321	647			105						34, 830
Iloilo					7						21, 300
Ilocos Norte		74		7	161		38	1	43	62	5, 600
Ilocos Sur	3	18		10	14			2	1		
Isabela	13	13	4		6						
Nueva Ecija	28		19	12			25				20, 422
Nueva Vizcaya		13		1	66			1	10		12, 580
La Union		73		18	97			55	51		5, 231
Leyte		1		28	5		6	43	3		5, 000
Laguna	1										
Mindoro	6	1									
Misamis											
Mountain Province	8	58	12	22	108			1	12	172	4, 680
Occidental Negros	4	40	2		30				41		8, 290
Oriental Negros											
Palawan		45	13	15	72		22				
Pampanga	3	67	131	45	191		390	32	59	5, 233	46, 060
Pangasinan	5	27			54				109		1, 715
Rizal											
Romblon											
Samar											1, 100
Sorsogon	1	1	2								11, 500
Tarlac	146	14			92				51	40	5, 850
Tayabas	3	28		2	63				24		1, 500
Zambales	2	8		2	6			3	10		1, 500
Batanes	2			2					1	30	
Total	587	1, 522	601	288	1, 376	816		191	699	5, 472	267, 644

^a D. H. O. = District health officers.^b P. S. D. = Presidents sanitary divisions.^c D. N. = District nurses.

TABLE Y.—*Home gardens established during the year.*

Provinces.	Number of pre-mises.	Number of persons to whom seeds were distributed.	Number of home gardens actually planted.
Albay	2,632	2,534	2,922
Ambos Camarines			8,538
Antique	3,768	2,487	1,867
Bataan		556	776
Bulacan	3,601	3,601	3,601
Batangas	14,489		14,788
Bohol	14,065	6,443	5,587
Cavite ^a			
Cagayan			9,171
Cebu ^a			
Capiz	6,912	6,912	6,037
Iloilo	4,552	2,907	5,188
Ilocos Norte	127,265	5,382	102,761
Ilocos Sur			36,249
Isabela	4,009		1,778
La Union	3,132	5,266	9,146
Leyte	2,061	1,696	1,089
Laguna		950	5,906
Mindoro	1,194	417	326
Mountain Province	1,555	1,957	1,476
Nueva Ecija	5,312		5,312
Nueva Vizcaya	3,334		1,155
Occidental Negros	17,869	287	12,792
Oriental Negros ^a			
Palawan ^a			
Pampanga	18,110	13,050	9,055
Pangasinan	34,212	7,827	52,737
Rizal	2,270	1,692	1,342
Romblon			280
Samar		20,224	4,445
Sorsogon	2,034	1,669	1,482
Tarlac		162	18,229
Tayabas	3,275	6,562	5,275
Zambales		15	7,449
Batanes	185	928	185
Total	295,802	99,518	330,462

^a No data.

paign, several cooking contests have been celebrated in the provinces. These contests were usually celebrated between school children of different towns and their principal object was chiefly to encourage the interest of the people towards preparing their own food with materials available in each locality, taking also into consideration the value as food of each recipe prepared.

XIX.

CLEAN-UP-WEEK.

Clean-up-week work has been carried out this year under the same plan as that of last year. All yards, gardens, etc., were cleaned, wells disinfected, fences repaired or constructed, houses cleaned and repaired, garbage and other refuse burned or buried, mosquito breeding places destroyed and in general all nuisances abated.

MISCELLANEOUS.

AUTOMATIC HEALTH CONTROL.

Cebu.—As already intimated in the 1917 annual report a party composed of five commissioned officers of this Service, five assistant sanitary inspectors and five nurses left Manila in March, 1918, for the Province of Cebu under the supervision of Passed Assistant Surgeon L. R. Thompson of the U. S. Public Health Service, and Miss Ora Bruchmiller as supervising nurse. The commissioned officers were Senior Surgeons Felipe Arenas and José Avellana Basa, Surgeons Juan S. Fernando, José T. Chaves and Bonifacio Mencias; Assistant Sanitary Inspectors Gerardo Simón, Filemón Ochoa, José Maglaque, Raymundo Peña and Filomeno Carreon; and Nurses Bárbara Sacro, Rosario Maravilla, Valeria Alano, Carmen Ilano and Florencia Urquico. The party was divided into several units each, each unit composed of one doctor, one assistant sanitary inspector and one nurse. The purpose of the commission was to carry into practice the principles of the Automatic Health Organization in the Province of Cebu, as laid out in the scheme of the "Sanitary Health Control System;" and to instruct the district health officers and presidents of sanitary divisions in the methods of said system. Each unit remained in each division the necessary time to complete the instruction.

Time employed by each unit.—One month was the average time employed by each unit to complete the collection of the sanitary census, and the compilation, recording, indexing of cards and the preparation of the health index charts, maps mortality and morbidity charts, weekly reports, etc.

It was very much regretted that due to cholera which was then epidemic in the province and to the various sanitary divisions having no doctors as presidents thereof, the results obtained were not as satisfactory as was expected. The apparent apathy of most of the local health officials who did not seem to take much interest in learning and following the instructions given to them by the members of the party contributed also to its failure. Nevertheless, quite a few improvements were achieved with the inauguration of this system as follows:

Weekly deaths occurring in each municipality are now reported by each president of sanitary division to the district health officer, giving the death rate per thousand population in the health index for each district.

This report is filled on a standardized form, giving also information regarding the personal data of the deceased, the duration of illness, and the provisional diagnosis by either the sanitary inspector or the municipal secretary when these officers sign the death certificate, and the final diagnosis by the president of sanitary division. With this new system of recording deaths in the municipalities the following undesirable conditions are now being remedied:

1. Reduction of incorrect, undetermined and absurd "diagnosis" to the minimum.

2. Presidents of sanitary divisions are now likely to become aware of any increase in the number of deaths so that they are apt to advantageously investigate every one of the deaths occurring in the municipality, in this way correcting the diagnosis and detecting a threatening outbreak of any epidemic.

3. With the weekly mortality reports received from his presidents of sanitary divisions the district health officer, in his turn, is always aware of the health conditions of every town or health district under his charge and is able to notice the cause of any undue sudden increase or prevalence of high mortality in any one of the municipalities comprised within the district.

4. Occult cases are caused to be indirectly discovered through the investigation of the mortality records.

5. Prompt, reliable and specific measures may be taken by the local health officer due to the accurate and quick information obtained from the system.

6. And above all, it is beyond question that by this gradual instruction and training of the sanitary personnel of the province in true, scientific and efficient sanitary control, the health conditions of the Province of Cebu shall necessarily be very much improved.

Bulacan.—The Province of Bulacan was also selected for the same standardization. The members of the commission formerly detailed in Cebu were ordered to proceed to Bulacan in August and start the same work there.

Time employed to complete the work.—The work was inaugurated on August 19 and was closed on December 3, 1918, a period of three and a half months.

Due to the comparatively better health organization of this province the new system was not so hard to inaugurate and establish in the various sanitary divisions of the province, as each of these divisions was under the charge of a physician and fairly complete subordinate personnel.

Units.—The party was divided in several units, one unit taking charge also of the district health officer's office.

Coöperation and enthusiastic willingness to learn and adopt the methods of the new system were found on the part of the district health officer, presidents of sanitary divisions and subordinate personnel as well. They had individually applied great attention and interest toward the prompt acquisition of all necessary instruction for the establishment and proper running of the health control system in their respective districts.

This was made clearly evident by the fact that after about one month's period of instruction the offices of the presidents of sanitary divisions were already equipped with all information, record cards, charts on mortality and health index weekly reports being submitted to the district health officer.

The following information was collected, recorded and filed in the office of each president of sanitary division:

1. *Family records*, which embrace the following data: (a) Persons in each family; (b) number of persons never or positively vaccinated; (c) deaths occurring in the family and cause of death; (d) water supply, its type, location and other sanitary conditions; (e) sewage disposal; (f) stables; (g) food; (h) lowland or mosquito breeding areas.

2. The following record cards were arranged and filed: (a) Water supply record cards, which were classified into different groups according to the class and type of supply, for general supply, public supply on private premises, and private supply.

3. *Record cards of tiendas.*—This card gives the following information:

- (a) Location of tienda; (b) class of tienda; (c) name of owner; (d) number and names of persons employed in tienda; (e) class of articles sold; (f) origin of fresh food sold; (g) sanitary condition.

4. Record and ready reference cards were also made of stables and toilet facilities.

5. *Sickness information.*—Record of all known cases of dangerous communicable diseases were also prepared and filed. Cards were classified and recorded according to diseases.

MORTALITY INFORMATION.

This part of the work was given the most particular attention as in the absence of reliable morbidity records, it was necessary to rely on the mortality records as an indicator of the prevalence of epidemic diseases.

The death records of each municipality were studied and tabulated as follows:

(a) The total deaths and death rats by years and age groups and the average death rate per 1,000 population for the five-year period.

(b) The average death rate per 100,000 population from each specific cause for the above mentioned period of years.

(c) Comparison of death rates between municipalities comprised in one Sanitary Division giving also the specific death from all causes for each municipality.

(d) A study of the weekly variation or changes of the death rate by means of the weekly health index. The reason for tabulating the deaths in weekly periods is to provide the health officer with a health index both of his municipalities and his sanitary districts.

(f) In connection with the health index which was furnished by each president of a sanitary division for each of the municipalities under his charge, a standardization of the classification of deaths was also inaugurated by means of a standard form like that used in the Province of Cebu with a few amendments introduced.

Tables illustrating the points described under paragraphs (a), (b), (c) and (d) are as follows:

TABLE AA.—Deaths and death rate by years (1913–1917) and age groups.

[Municipality of Paombong.]

Years.	Population.	Deaths under 1 year.	Death rate per 1,000 population.	Deaths under 5 years.	Death rate per 1,000 population.	Deaths over 5 years.	Death rate per 1,000 population.	Total deaths.	Death rate per 1,000 population.
1913	9,921	96	9.67	37	3.72	100	10.07	233	23.48
1914	9,956	111	11.14	73	7.33	132	13.25	316	31.73
1915	10,113	121	11.96	80	7.91	93	9.19	294	29.07
1916	10,153	146	14.37	166	16.33	166	16.33	478	47.07
1917	10,291	130	12.64	33	3.20	119	11.57	282	27.42
Total	50,424	604	11.97	389	7.71	610	12.09	1,603	31.79

By means of this table the health officer will be able to ascertain the normal death rate of each town or municipality under his charge thus being also aware when the death rate of the year just ended is higher than being also aware when the death rate of the year just ended is higher than the normal death rate of that district. Thus in the year 1916 the death rate was comparatively higher than other previous years as it reached 47.07 per 1,000, the cause of this high rate being cholera which was epidemic in the municipality of Paombong. A tendency to drop is noted in the year 1917.

TABLE BB.— *Principal census of death summary.*

[Municipality of Paombong, Bulacan. Total population for five years (1913-1917), 50,424.]

Causes of death.	Under 1 year.	1 year to under 5 years.	Over 5 years.	Total.	Death rate per 100,000 population.
Typhoid fever		1	15	16	31.72
Malaria	1	14	55	70	138.81
Smallpox					
Measles	5	4	2	11	21.81
Whooping cough	2	12		14	27.76
Diphtheria					
Influenza					
Cholera		10	59	69	136.83
Dysentery	14	93	28	135	267.71
Beriberi	41	23	41	105	208.22
Tuberculosis of lungs		3	151	154	305.39
Cancer			1	1	1.98
Meningitis	13	14		27	53.54
Convulsions of infants	278	37	1	316	626.65
Acute bronchitis	67	16	1	84	166.58
Chronic bronchitis			1	1	1.98
Broncho pneumonia			1	1	1.98
Pneumonia			1	1	1.98
Diarrhœa and enteritis—2	55			55	109.06
Diarrhœa and enteritis—2		60	5	65	128.90
Diseases of Infancy:					
1 congenital debility	54			54	107.08
2 other diseases	4			4	7.93
3 lack of care					
Tetanus umbilical	20			20	39.68
Tetanus		1	1	2	3.96
Rickets	7	13	1	21	41.64
Accidents of labor			13	13	25.78
Puerperal hemorrhage			1	1	1.98
Erisipelas	27	18	7	52	103.12
Anemia			1	1	1.98
Senility			99	99	196.32
Illdefined	16	67	46	129	255.81
Undetermined			7	7	13.88
All other causes		3	72	75	148.73
Total	604	389	610	1,603	3,178.90
Death rate per 100,000 population	1,197.79	771.42	1,209.69		

From the study of the above table, the presidents of sanitary divisions are able to deduce the following important information: That by order of importance, the chief causes of mortality in the town of Paombong are "convulsions of infants," "tuberculosis of the lungs," "beriberi" and "dysentery." Of these diseases, constituting the chief causes of deaths, three of them, tuberculosis, beriberi and dysentery are preventable. Infantile convulsions may also be considered as a preventable disease, as this term only indicates a symptom which may be produced by any of the well known preventable diseases. For the reduction of the mortality rate the health officer shall therefore direct his campaign specifically against these diseases.

TABLE CC.—*Death rate per 1,000 population by age groups and by municipalities.*

[Philippine Health Service. Sanitary Division No. 1. Province of Bulacan, P. I.]

Municipality.	Years.	Total population.	Deaths under 1 year.	Deaths rate.	Deaths under 5 years.	Deaths rate.	Deaths over 5 years.	Deaths rate.	Total deaths.	Deaths rate.
Malolos	1913-1917	157,963	1,306	8.27	644	4.08	1,795	11.36	3,745	23.71
Paombong	1913-1917	50,424	604	11.97	389	7.71	610	12.09	1,603	31.79

TABLE DD.—*Specific mortality by municipalities.*

[Death rate per 100,000 population, 1913-1917.]

Cause of death.	Malolos.		Paombong.	
	Total deaths.	Death rate.	Total deaths.	Death rate.
Typhoid fever	23	14.56	16	31.72
Malaria	93	58.56	70	138.81
Smallpox				
Measles	5	3.16	11	21.81
Whooping cough	14	8.86	14	27.76
Diphtheria	2	1.27		
Influenza	1	0.63		
Cholera	282	178.62	69	136.83
Dysentery	74	46.84	135	267.71
Beriberi	199	125.97	105	208.22
Tuberculosis of lungs	332	210.17	154	305.39
Tuberculosis other organs	74	46.84		
Cancer	3	1.90	1	1.98
Meningitis	271	171.55	27	53.54
Convulsions infants	363	229.79	316	626.65
Acute bronchitis	143	90.52	84	166.58
Chronic bronchitis			1	1.98
Broncho pneumonia	6	3.80	1	1.98
Pneumonia	1	0.63	1	1.98
Diarrhea and enteritis—2	115	72.80	55	109.06
Diarrhea and enteritis—2	133	84.19	65	128.90
Congenital debility	102	64.57	54	107.08
Other diseases	58	36.61	4	7.93
Lack of care	22	13.92		
Umbilical tetanus	43	27.22	20	39.66
Rickets	35	22.16	21	41.64
Atrepsia	117	74.06		
Accident of labor	17	10.76	13	25.78
Puerperal septichamia	7	4.43		
Puerperal hemorrhage	1	0.63	1	1.98
Erysipelas	79	50.01	52	103.12
Intestinal parasite	52	32.93		
Anemia	94	59.51	1	1.98
Rabies	4	2.53		
Plague	1	0.63		
Nephritis	100	63.30		
Senility	203	128.50	99	196.32
Ill defined	196	124.07	129	255.81
Undetermined	58	36.71	7	13.88
All other causes	422	267.13	75	148.73

By a study of the above table the health officer is able to ascertain which of the municipalities of his division needs the most intensive sanitary work. The prevalence of preventable causes of deaths is clearly compared by one municipality with another.

Paombong shows a higher death rate than Malolos. This town therefore is in greater need of efficient sanitary work than Malolos.

TABLE EE.—*Weekly health index.*

[Municipality of Hagonoy, Bulacan.]

Estimated population in July 1, 1918, 25,993.

Average population for five years (1913-1917), 25,148.

Death rate for the corresponding weeks, 1918.

Average deaths and death rate for the corresponding weeks, 1913-1917, epidemics excluded.

Weeks.	Week ending—	With epidemics.		Without epidemics.		Deaths under 1 year.		Total deaths.		Deaths under 1 year.	
		Total deaths.	Death rate per 1,000 population.	Total deaths.	Death rate per 1,000 population.						
1	January 5			17	34.00	14	28.00	14.00	29.00	5.40	11.16
2	January 12			19	38.00	11	22.00	15.20	31.42	9.00	19.00
3	January 19			16	32.00	6	12.00	15.00	31.01	7.00	14.47
4	January 26			30	60.00	15	30.00	12.00	25.00	5.20	11.60
5	February 2			22	44.00	14	28.00	14.00	29.00	8.00	16.54
6	February 9			26	52.00	16	32.00	14.20	29.36	7.00	14.47
7	February 16			17	34.00	8	16.00	14.00	31.01	6.40	13.23
8	February 23			22	44.00	8	16.00	13.00	27.00	5.00	10.33
9	March 2			23	46.00	8	16.00	14.40	30.00	4.20	9.09
10	March 9			13	26.00	8	16.00	12.40	26.00	7.00	14.00
11	March 16			17	34.00	11	22.00	12.00	25.00	5.00	10.40
12	March 23			17	34.00	8	16.00	11.00	23.00	4.40	9.09
13	March 30			27	54.00	11	22.00	12.40	26.00	5.20	11.60
14	April 6			27	54.00	13	26.00	13.20	27.29	6.00	12.40
15	April 13			19	38.00	11	22.00	14.00	29.00	6.20	13.00
16	April 20			21	42.00	10	20.00	12.20	25.32	6.00	12.40
17	April 27			20	40.00	9	18.00	12.00	25.00	5.00	11.16
18	May 4			26	52.00	11	22.00	14.20	29.36	5.40	10.33
19	May 11			18	36.00	10	20.00	17.20	35.56	6.20	13.00
20	May 18			18	36.00	8	16.00	12.00	25.00	4.40	9.09
21	May 25			16	32.00	10	20.00	12.40	26.00	5.20	11.00
22	June 1			27	54.00	15	30.00	14.00	29.00	5.40	11.16
23	June 8			27	54.00	8	16.00	12.20	25.32	6.00	12.43
24	June 15			24	48.00	11	22.00	15.20	31.42	5.00	10.30
25	June 22	34	68.0	29	58.00	17	34.00	17.40	35.00	8.00	16.54
26	June 29	27	54.0	22	44.00	10	20.00	19.00	39.28	7.00	14.47
27	July 6	36	72.0	32	64.00	8	16.00	18.40	38.04	7.20	15.00
28	July 13	37	74.0	34	68.00	12	24.00	14.40	30.00	5.00	10.33
29	July 20	27	54.0	25	50.00	8	16.00	15.00	31.01	4.20	9.00
30	July 27	19	38.0	15	30.00	4	8.00	16.00	33.08	5.00	10.33
31	August 3	15	30.0	14	28.00	9	18.00	13.00	27.00	4.40	9.09
32	August 10	17	34.0	14	28.00	8	16.00	13.20	27.29	5.00	10.33
33	August 17	17	34.0	16	32.00	4	8.00	13.00	27.00	4.40	10.09
34	August 24	24	48.0	19	38.00	8	16.00	14.00	29.00	5.20	11.00
35	August 31	14	28.0	12	24.00	4	8.00	13.00	27.00	5.20	11.00
36	September 7	17	34.0	16	32.00	9	18.00	15.00	31.01	7.00	14.47
37	September 14	20	40.0	19	38.00	6	12.00	13.00	27.00	5.20	11.00
38	September 21			24	48.00	14	28.00	11.00	23.00	5.00	10.33
39	September 28	16	32.0	15	30.00	7	14.00	13.00	27.00	6.00	12.00
40	October 5			18	36.00	10	20.00	10.00	21.00	4.00	8.27
41	October 12			11	22.00	6	12.00	12.40	26.00	6.20	13.00
42	October 19							10.40	21.50	6.00	12.40
43	October 26							18.00	16.54	4.00	8.27
44	November 2							11.20	23.17	6.00	12.40
45	November 9							14.40	30.00	6.00	12.40
46	November 16							12.00	25.00	6.00	12.40
47	November 23							12.00	25.00	6.00	12.40
48	November 30							18.00	37.21	9.00	19.00
49	December 7							16.40	34.00	8.20	17.00
50	December 14							11.00	23.00	6.00	12.40
51	December 21							17.20	35.56	9.00	19.00
52	December 28							15.00	31.01	6.00	12.40

The value of the Health Index for the health officer cannot be overestimated. By the weekly death rate a constant check of the death rate of a town is always had so that any threatening outbreak of an epidemic is promptly noticed by the health officer.

TABLE FF.—Comparison of death rates by municipalities.

[Province of Cebu, 1913-1917.]

District.	Municipality.	Deaths under 1 year.		Deaths under 5 years.		Deaths over 5 years.		Total deaths.	
		Total deaths.	Rate per 1,000 population.	Total deaths.	Rate per 1,000 population.	Total deaths.	Rate per 1,000 population.	Total deaths.	Rate per 1,000 population.
1	Cebu	453.6	7.71	228.2	3.88	518.4	8.81	1,200.2	20.4
	Mandawe	55	4.1	84	6.2	171	12.5	310	22.8
	Opon	84	5.6	66	4.4	148	9.8	298	19.8
2	Liloan	60	4.9	45	3.7	158	12.8	263	21.4
	Danao	95	4.8	72	3.6	177	8.8	344	17.2
	Cordoba	26	3.3	34	4.4	53	6.8	112	14.5
	San Francisco	34.6	3.3	34	3.2	50.4	4.8	119	11.4
3	Poro	15.6	2.4	14.6	2.3	30.6	4.8	60.8	9.5
	Tudela	13.8	3.0	11.6	2.7	27	5.9	52.4	11.5
	Pilar	4.4	0.8	26.6	4.6	41	7.7	73	13.1
	Catmon	61.6	3.27	53.4	2.75	132.4	6.8	247.4	12.73
	Carmen	38.6	3.54	29.4	2.70	65.8	6.05	133.8	12.29
4	Borbon	40.4	4.65	23.2	2.68	50.6	5.82	115.2	13.15
	Tabogon	70.8	4.73	38.8	2.59	86.2	5.76	195.8	13.09
	Bogo	83.2	13.9	54.2	2.08	95.8	3.1	253.3	8.99
5	San Remigio	26.8	1.88	26.6	1.79	58.6	4.13	112	7.90
	Medellin	38.4	2.30	29.4	1.75	72.6	4.33	140.5	8.4
	Daan Bantayan	76.6	3.56	46.6	2.17	99.8	4.66	222.8	10.36
	Bantayan	102.2	5.32	73	3.80	118.4	6.14	193.6	15.30
6	Santa Fe	23.8	4.47	26	4.88	30.2	5.67	80	15.03
	Madrilegos								
	Tuburan	78	2.57	47.2	1.55	126.4	4.17	251.8	8.80
7	Asturias	50.4	2.72	46.6	2.52	90.2	4.99	187.2	10.10
	Balamban	64.4	6.31	32	3.83	88.2	8.64	184.6	17.59
	Toledo	102.6	6.04	41.6	2.44	135.6	7.90	270.8	16.46
8	Pinamunganan	85.2	5.17	43.2	2.6	105.2	6.35	233.6	113.90
	Aloguinsan	42	2.65	32.2	1.19	80.2	5.07	152.8	9.67
	Dumanjug	123	4.5	57	2.1	120	4.4	300	11.0
9	Barili								
	Ronda								
	Badian	46.6	3.46	25.4	1.89	70.2	5.21	142.2	10.56
10	Moalbual	104.6	7.33	49.8	3.44	111.4	7.70	531.6	18.37
	Alcantara	32.75	5.61	15.75	2.7	34.75	6.13	84.2	14.44
	Malabuyoc	69.8	4.81	47	3.24	146	10.07	262.8	18.12
	Alegria	55	4.66	25.8	2.19	82	7.29	166.8	14.14
11	Samboan	37.2	3.9	34.8	3.65	91.2	2.57	163.2	17.12
	Ginatilan	44.6	3.41	31.4	2.4	103.6	7.93	179.6	13.74
	Dalaguete	224.6	8	152	5.4	299.8	10.8	660.2	24.3
	Boljoon	56.2	6.6	19.8	3.2	58.2	6.9	134	15.9
12	Oslob	(a)							
	Alcoy	(b)							
	Santander	76.8	4.5	57.8	3.3	124	7.2	258.6	13.9
	Carcar	230.2	6.5	158	3.8	423.6	10.4	811.8	20
13	Argao	198.2	4.2	86	1.8	303	6.5	587.2	12.6
	Sibonga	114.2	3.4	69.8	2.1	208.2	6.3	392	11.9
	Naga	57.4	2.7	54.4	2.5	162	7.5	273.8	12.8
14	Talisay	54.8	4.5	80.2	8.5	178.2	10.8	333.2	19.8
	Minglanilla	71.8	5.6	62	4.8	131.8	10.3	256.6	20.7
	San Fernando	101.8	5.4	82.8	4.3	175.8	9.3	360.4	19.2

^a With Santander.^b With Dalaguete.

TABLE GG.—*Death (stillbirth excluded) reported during the week ending December 28, 1918, with death rate in each municipality of the province.*

Municipality.	Death rate per corresponding week, 1918.					Average of corresponding week 1913-1917.				
	With epidemics.		Without epidemics.			Total deaths.	Death rate per 1,000 population.	Deaths under 1 year.	Death rate per 1,000 population.	Average population.
	Total deaths.	Death rate per 1,000 population.	Total deaths.	Death rate per 1,000 population.	Deaths under 1 year.					
Malolos.....	32,818	46	72.81	28.45	15	14.40	24.00	6.00	10.00	31,593
Paombong.....	10,303	29	146.36	66.00	4	5.00	26.00	3.00	15.46	10,084
Bulacan.....	14,884	16	55.84	52.35	8	6.2	22.57	2.00	7.28	14,286
Bigaa.....	10,692			29.16	2	4.0	20.64	1.8	9.28	10,079
Guiguinto.....	5,116			20.32	1	1.8	19.26			4,859
Calumpit.....	17,419	14	41.58	32.67	5	8.0	24.88	3.8	11.81	16,709
Baliuag.....	22,405	9	20.87	16.24	2	11.4	27.62	4.8	11.63	21,461
Bustos.....	7,473	8	55.66	14.70	1	3.0	21.36	1.0	7.12	7,301
San Rafael.....	9,737	2	10.38	5.34	1	2.2	12.49	1.4	7.94	9,139
Santa Maria.....	13,538	5	19.00	21.8	1	4.2	17.2	2.2	9.0	12,580
San Jose.....	1,744			21.8		0.4	12.4	0.4	6.2	1,672
Bocaue.....	10,654			62.4		5.4	31.3	2.9	11.6	10,220
Folo.....	10,314	14	67.2	45.00	6	3.8	19.7	1.0	5.2	9,899
Obando.....	10,191			45.9	4	5.2	27.5	2.6	13.7	9,729
Maricao.....	4,438			46.8		2.0	24.4	0.8	9.7	4,255
Maycauyan.....	12,172	17	72.6	69.00	4	6.8	30.1	3.8	16.8	11,677
Hagonoy.....	25,993	34	68.	48.00	15	15.00	31.01	6.00	12.40	25,148
San Miguel.....	18,758			37.8	6	6.6	18.8	2.8	7.9	18,008
San Ildefonso.....	6,785			60.8	5	5.4	43.2	2.2	17.6	6,454
Angat.....	9,013			46.16	2	11.54	14.56	0.2	1.21	8,571
Norzagaray.....	6,644			46.96	3	2.0	16.46	0.8	6.59	6,318
Quingua.....	9,200	7	54.79	23.04	3	24.61	24.61	2.0	11.72	8,867
Pulilan.....	12,342	5	21.05	16.84	2	4.4	19.27	1.0	4.38	11,876

TABLE HH.—*Death summary.*

[Tuberculosis of lungs, 1913-1917.]

Municipality.	Under 1 year.	One year to under 5 years.	Over 5 years.	Total.	Death rate per 100,000 population.
Malolos			332	332	210. 17
Paombong			154	154	305. 39
Bulacan			294	294	411. 60
Bigaa			186	186	378. 28
Guiguinto			103	103	424. 36
Calumpit			304	304	861. 76
Baliuag		1	411	412	383. 94
Bustos			30	30	410. 70
San Rafael		1	139	140	305. 58
Santa Maria		1	267	268	318. 24
San Jose			26	26	309. 70
Bocaue		2	29	31	60. 45
Polo			169	169	341. 38
Obando	1	1	193	195	397. 80
Marilao			73	73	343. 10
Meycauayan			204	204	348. 84
Hagonoy		1	455	456	362. 65
San Miguel			297	297	352. 67
San Ildefonso			138	138	414. 00
Angat			166	166	387. 37
Norzagaray					
Quingua			211	211	474. 75
Pulilan			217	217	364. 56

Tables FF, GG and HH will illustrate the summary of all information regarding mortality statistics in each municipality so that they are all summarized and studied by the district health officer who by this centralized informations is able to keep a constant check on the sanitary condition of his district. At the same time his supervision and control over his subordinate personnel becomes so effective that if this system is used with due diligence the health work in the provinces will no longer constitute such a very hard problem to solve by those engaged to carry out same.

It is needless to say that with the standardization of the sanitary divisions and the health districts the efficiency of both technical and administrative service in every province and the centralization of this standardized work with the Central Office will necessarily reflect towards the efficiency of the Philippine Health Service.

CLOSING REMARKS.

The activities of provincial health organizations and health officers during the year have been almost wholly directed toward the eradication of the cholera, smallpox, and influenza epidemics.

The above explains why only few permanent improvements were effected during 1918 in provincial sanitary work. In campaigns undertaken to eradicate epidemics, the Service has been

confronted with the disadvantage of having an inefficiently trained personnel, many of the employees having either scant preparation, or none at all, to carry out the so-called modern science of preventing medicine, this fact contributing to a great extent to the difficulty encountered in preventing epidemics.

It is true that health matters and their importance are not yet known to any extent in the provinces, and this is probably the fault of no one in particular, but many health officers were partly responsible in that they failed to show interest in their work. President of sanitary divisions and commissioned officers of this Service having a salary lower than ₱3,000 per annum are permitted to engage in private practice, because their salaries are considered insufficient at the present time. This fact appears to be the cause of their paying more attention to their personal interests than to public health matters. They just limit themselves (with few exceptions) to attend to routine work of the office, but do not endeavor to promote and increase the interest of the people towards sanitation, nor do they pay much attention to health problems. The actual health organization has also its part in this problem, because the health fund is not centralized in an individual in each province and for this reason the amount appropriated either by the general fund of the province or municipal fund depends greatly upon political contingencies.

There are also many provisions of law that leave the health officers forsaken if not completely hand-tied, placing them in an unbearable situation.

So long as these conditions continue, a rapid and efficient progress in the sanitation of the provinces is impossible.

RECOMMENDATIONS.

1. WITH REFERENCE TO HEALTH ORGANIZATION.

(a) Revision of the Philippine Health Service law centralizing all powers conferred upon the provincial boards and municipal councils in the hands of the Secretary of the Department and the Director of Health.

(b) Creation of a "Training School of Sanitation" for commissioned and noncommissioned officers in the Service.

(c) Division of the Islands into sanitary districts assigning to each district an inspector who can make continuous and intensive supervision of subordinates as well as of the health organization.

(d) The presidents of sanitary divisions to be classified as commissioned officers in the Philippine Health Service.

(e) That all officers in the Service be employed at full time.

(f) The schedule of salaries to be as follows:

President of sanitary division.....	₱2,400
Surgeon	3,000
Senior surgeon.....	3,600
Medical inspector.....	4,200
Senior medical inspector.....	5,000
Senior medical inspector and inspector of sanitary district.....	5,800
Senior medical inspector and chief of division, one of whom should be Assistant Director of Health.....	7,200
Director of Health.....	10,000

The salaries of noncommissioned officers graduated from the "Training School of Sanitation" should be as follow:

Assistant sanitary inspector, third class.....per annum....	₱600
Assistant sanitary inspector, second class.....do.....	720
Assistant sanitary inspector, first class.....do.....	900
Senior assistant sanitary inspector.....do.....	1,000
Sanitary inspector, third class.....do.....	1,200
Sanitary inspector, second class.....do.....	1,500
Sanitary inspector, first class.....do.....	1,800
Senior sanitary inspector.....do.....	2,400

(g) That the Service furnish free uniforms to noncommissioned officers.

2. WITH REFERENCE TO WATER SUPPLIES.

(a) Introduction and extension of methods of water purification.

(b) Stimulation and facilities to communities and municipal governments in drilled artesian wells, gravity, hydrant or other safe systems of water supply.

3. WITH REFERENCE TO EXCRETA AND REFUSE DISPOSAL

(a) Making compulsory the establishment of sanitary disposal of excreta and refuse in any kind of building, public or private, and in streets.

(b) Elimination within municipal limits of cesspools and privies.

(c) Permitting no building of any kind to be built without sanitary facilities.

(d) Promulgate a law giving power to the Philippine Health Service for regulating in the Islands the above provisions.

4. WITH REFERENCE TO COMMUNICABLE DISEASES.

(a) Promulgation by the Service of minimum standard for the control of nuisances.

(b) Declaration by the Service of the conditions which shall be considered as nuisances.

(c) Promulgation by the Service of standard of industrial hygiene and sanitation of places of employment.

(d) Standard of dwelling houses for laborers.

(e) Promulgation of standard methods for scoring the sanitary condition of communities.

REPORT OF THE DIVISION OF MINDANAO AND SULU.

[Dr. JACOBO FAJARDO, *Chief of Division.*]

For the sake of brevity and for other sufficient reasons, it seems unnecessary to repeat the matters contained in previous reports which should be considered the basis for this and subsequent reports. Accordingly, the text of the present report is limited as far as possible to the statement of noteworthy and significant occurrences during the year.

I.

AREA.

There has been no change in the territorial area of the Division of Mindanao and Sulu. The division embraces all the provinces within the Islands of Mindanao and Sulu.

II.

ORGANIZATION.

All the provinces of the division are organized into sanitary divisions. The general provisions of law concerning public health have been made applicable to the provinces of the Department. The Province of Surigao was the last to be organized into sanitary divisions. After a great effort in securing physicians to be presidents of the sanitary divisions in May last, all the positions have been filled and the towns along the Pacific coast where the people have never before seen physicians began to receive the benefit of the organization; with this organization of the Province of Surigao, it may be said that the coast towns of the Island of Mindanao, including the Pacific coast, besides those towns in the interior of the Island, are now fairly provided with medical assistance.

III.

During the year, the number of personnel of the division is as follows:

Physicians	33
Commissioned officers.....	16
Noncommissioned officers.....	17
Nurses	41
Males	26
Females	15
Midwives	10
Dispensary attendant-sanitary inspectors.....	66
Sanitary inspectors.....	51
Special sanitary inspectors.....	9
Total	210

IV.

PREVENTABLE COMMUNICABLE DISEASES.

CHOLERA.

The cholera epidemic in the Provinces of Agusan, Misamis, and Surigao was the continuation of the 1917 outbreak.

In the Province of Agusan, the last case was registered in February and since then till the close of the year the disease did not reappear at all in the province.

The Province of Lanao was infected on May 8, the case being one of the sailors of the Kolambugan Lumber Co. On June 2, a sailor of an interisland steamer who landed in Kolambugan died from cholera. The infection of Kolambugan was evidently from the town of Misamis, Misamis. On June 9, the disease broke out in the municipal district of Capatagan which lasted up to July 16. On September 11, sporadic cases of cholera were recorded in the municipality of Iligan. It is very likely that the infection was brought by travelers from Initao, Misamis. Again, infection from Cagayan, Misamis Province, found its way by some traders bound for Taraka, Lanao. Two of them died while still on the way. The infection extended as far as Gata, Romain, Ganassi, Linok and Madallum. At the close of the year, the epidemic was practically placed under control, there being registered in January of 1919 but one case and one death.

The Province of Zamboanga was infected in January. The first municipality infected was Dipolog. Dapitan was the second to be infected in the same month. The epidemic abated on March 14 when the last case was reported. On June 23, the disease broke out in Margosatubig, but the epidemic was, like the other epidemics, immediately placed under control and had but very few victims to be lamented up to July 6. On December 7, a case was discovered in the barrio of Ayala of the municipality of Zamboanga. Ayala is the landing place of some Moro traders proceeding on vintas (Moro boats) from Dumaguete, Cebu, and other Visayan ports. The infection spread very rapidly and reached the barrios of Santa Maria, Santa Cruz, Tugaga, Tubuñgan, Talontalon, Guioan, Boalan, and Tetuan, besides the poblacion of Zamboanga. At the close of the year the epidemic was practically under control.

Below is shown the consolidated report of cholera during the year:

Cholera statistics, by months.

1918.	Agusan.		Bukidnon.		Lanao.		Misamis.		Surigao.		Zamboanga.		Total.		Mortal-ity.
	C. ^a	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	
January.....	106	55					70	45	253	157	13	12	452	269	<i>Per ct.</i> 59.51
February.....							210	118	135	88	35	30	380	236	62.10
March.....							242	144	56	37	20	15	318	196	61.63
April.....			2	2			226	141	125	92			353	235	66.98
May.....							242	126	40	39			282	165	58.51
June.....							81	43	37	36	3	2	144	89	61.80
July.....							111	61	19	17	14	10	162	97	59.81
August.....				7			107	56	28	27			185	83	61.48
September.....							21	11	4	4			35	21	60.00
October.....							19	9	45	45			68	58	85.29
November.....							71	49	3	3			94	65	69.14
December.....							71	51			55	41	142	98	69.01
Total.....	106	55	15	7	78	41	1,471	854	755	545	140	110	2,565	1,612	62.91

^a C = Cases.^b D = Deaths.

Cholera statistics, by municipalities.

	Cases.	Deaths.	Mortal- ity.
Agusan:			<i>Per cent.</i>
Butuan	29	18	-----
Cabadbaran	6	2	-----
Talacogon	10	2	-----
Gibung	1	1	-----
Simolao	6	1	-----
Wawa-Ojot	20	11	-----
Umayam	37	20	-----
Total	106	55	51.88
Bukidnon:			
Tankulan	7	4	-----
Libuna	8	3	-----
Total	15	7	46.66
Lanao:			
Kolambugan	3	3	-----
Kapatagan	25	9	-----
Iligan	10	6	-----
Taraka	17	10	-----
Romain	5	5	-----
Gata	5	5	-----
Ganassi	2	0	-----
Lenok	6	0	-----
Madallum	5	3	-----
Total	78	41	52.56
Misamis:			
Caawayan	158	91	-----
Gingoog	18	7	-----
Initao	31	20	-----
Oroquieta	163	83	-----
Plaridel	191	130	-----
Talisayan	13	12	-----
Jimenez	191	108	-----
Mambajao	29	13	-----
Sagay	1	1	-----
Tagoloan	206	87	-----
Balingasag	37	26	-----
Baliangao	53	41	-----
Cataman	1	0	-----
Aloran	35	32	-----
Misamis	344	203	-----
Total	1,471	854	58.05
Surigao			
Surigao	14	11	-----
Dapa	287	248	-----
Cantilan	149	78	-----
Placer	13	13	-----
Gigaquit	138	107	-----
Hinatuan	154	88	-----
Total	755	545	72.18
Zamboanga:			
Zamboanga	55	41	-----
Dapitan	43	37	-----
Dipolog	24	19	-----
Lubungan	1	1	-----
Margosatubig	3	2	-----
Lubungan	14	10	-----
Total	140	110	78.57

At the close of the year, of the nine provinces under the jurisdiction of this division, only Misamis remained epidemically infected.

As may be seen from the present report, the disease spread with the greatest rapidity and prevailed for a longer time in

the two regularly organized provinces, namely, Surigao and Misamis, especially in the latter. This fact is due to the negligence on the part of the local authorities in not coöperating with the sanitary personnel, and to the lack of a good system for the disposal of human excreta. In spite of repeated endeavors to induce the municipal authorities to take up the matter of installation of Antipolo system of toilets, both verbally and in writing, there are yet some municipalities in Misamis which have not adopted the system. The blame should fall on the municipal authorities concerned, who paid little or no attention to the establishment of proper systems for human waste disposal.

The case of the municipal president of Oroquieta speaks obviously not only of the negligence on the part of said authority but also of his deliberate attempt to be the first in violating the law and sanitary regulations. A member of his family was attacked with cholera. The patient was living in the same house with the president. Instead of reporting the case to the health authorities, it was hidden for more than 24 hours until a representative of the Health Service discovered it. The matter was brought before the provincial board of Misamis, but unfortunately nothing was done to administratively punish the municipal executive. Similiar cases of concealment of cholera cases were found in other municipalities of the Province of Misamis as reported by the district health officers.

The towns along the Northern coast of the Island of Mindanao are more easily infected on account of their proximity to the Visayan provinces and of the constant movement of the people from points of the coast of Mindanao to the Visayan provinces and viceversa.

Referring to the infection of the municipality of Zamboanga, it has been observed that, as in previous years, the barrio of Ayala has always been the place where the first cholera case was registered. Many possible factors contribute to explain why this is so. (1) Many Moros live in Ayala and its vicinity whose main occupation is the trade of a certain dye tree bark (tangal). These Moros frequently go to Cebu, stay there for days and weeks exposed to infection and then return to Ayala. On account of landing from vintas and other larger sailing boats on any part of the long shore-line of Ayala, it is quite hard to effectively detain and inspect these Moros when returning from Cebu before being allowed to land. If these Moros do not actually develop cholera they are at least a constant source of infection as cholera carriers.

SMALLPOX.

With the exception of the Provinces of Sulu and Bukidnon, all the provinces of this division have been infected with smallpox.

The disease broke out in Cotabato in April in the barrio of Ganga, district of Dulauan. The infection undoubtedly originated from Bayang, Lanao Province, wherefrom seven Maranaos came over the Banisilan-Pikit trail to Ganta. Fortunately the disease was quickly placed under control. In October the epidemic was already in the wane and at the close of the year the province could be pronounced practically free from the disease.

The epidemic of smallpox in the Province of Davao was a continuation of the 1917 outbreak. In January, 1918, the seat of infection was in the municipalities of Davao, Santa Cruz, Guianga, and Samal. In that same month the municipalities of Tagum and Pantukan became infected. Successively, the infection reached Malita, Sigaboy, and Mati. The epidemic was in its acute stage in the month of March, thence it gradually began to decline. Only a few isolated cases were registered towards the close of the year.

The smallpox epidemic in Lanao was the continuation of the December (1917) outbreak. It would not have spread throughout the province were it not for the inactivity or at least the weakness of the vaccine virus. The epidemic was in its declining state in September and at the close of the year only very few isolated cases were registered.

The first case of smallpox in the Province of Misamis was discovered in April in the municipality of Mambajao, where a girl who had come from Cebu was found suffering from the disease. During the same month cases among Moros were registered in the mountains of Polut and Liposang. Successively, Misamis, Cagayan, Initao, Aloran, Jimenez, Balingasag, Plaridel and Tagoloan were infected.

In June one case of smallpox was registered in the municipality of Hinatuan, Surigao, the patient being a native who had come from Cebu. Up to the last day of August, 15 cases with 5 deaths were recorded in Hinatuan. No cases were registered in September. In October the disease broke out in Dinagat and Placer. Only Surigao and Dinagat remained infected at the close of the year.

The 1917 epidemic of smallpox in Zamboanga continued during 1918. During the year the places infected were Zam-

boanga, Margosatubig, Dapitan, Isabela, Dipolog, Putic, and Mercedes. Towards the close of the year only Dapitan and Dipolog remained infected. Of the cases registered in the municipality of Zamboanga only very few were found in the city itself, the rest being in the remote barrios and districts.

The following tables show the number of cases and deaths during the year:

Smallpox statistics, by month.

1918.	Cotabato.		Davao.		Lanao.		Misamis.		Sulu.	Surigao.	Zamboanga.		Total.	Mortal-ity.
	C.	D.	C.	D.	C.	D.	C.	D.						
January			162	38	56	4					112	11	330	53
February			586	111	414	22					43	5	1,043	138
March			702	90	833	44					80	31	1,618	156
April	1	0	187	25	982	50			1				1,369	75
May	164	3	138	17	65	7							1,367	27
June			62	8	61	8					17	1	1,360	58
July	1,210	71	13	4	132	23				10	31	11	3,062	296
August	2,854	193	49	8	110	4				8	6	1	1,872	197
September	1,695	181	60	22	35	2				1	5	2	1,111	183
October	1,049	49	38	15	2	0					1	1	665	367
November	590	335	70	36						2	6	1	112	50
December	6	1	71	0	10	0				40	7	1	182	16
Total	7,576	833	2,138	374	2,700	164	155	31	2	62	308	64	12,951	1,486
														11.47

Per ct.	
53	16.05
138	13.23
156	10.25
75	6.41
27	7.35
58	6.47
296	7.73
197	10.52
183	7.08
367	53.68
50	44.64
16	8.79

Smallpox statistics, by municipalities.

	Cases.	Deaths.	Mortal- ity.
			<i>Per cent.</i>
Cotabato:			
Maganoy	115	19	
Cotabato	543	521	
Parang	116	16	
Glan	265	63	
Tumbao	483	41	
Dulauan	2,827	231	
Calañganan	28	1	
Nuling	755	60	
Dinaig	1,313	76	
Kidapawan	8	1	
Silik	755	30	
Taviran	35	0	
Libuñgan	26	1	
Awang	174	23	
Peido Pulañgi	39	13	
Pagalungan	94	6	
Buluan	(a)	200	
Total	7,576	1,302	10.99
Davao:			
Davao	455	73	
Samal	161	55	
Pantukan	270	32	
Guianga	190	61	
Sta. Cruz	530	122	
Tagum	387	11	
Malita	110	9	
Mati	30	7	
Sigaboy	5	1	
Total	2,138	374	17.94
Lanao:			
Dansalan	112	9	
Ganassi	187	15	
Ditzaan	8	0	
Tugaya	268	19	
Tamparan	6	0	
Binidayan	256	23	
Madamba	19	5	
Romain	36	4	
Pantar	20	0	
Iligan	80	9	
Lumbatan	19	1	
Watu	7	0	
Munai	30	1	
Maguing	18	3	
Butig	2	0	
Taraka	1	0	
Capai	4	0	
Kylambugan	20	4	
Balut	156	6	
Sadoc	6	0	
Tuca	9	0	
Lumbak	22	1	
Bakulud	201	8	
Maul	16	3	
Sugud	2	1	
Gadungin	2	0	
Kialilidan	27	0	
Pated	69	2	
Marimaut	1	0	
Madaya	1	1	
Buayan	2	0	
Betsaan	1	0	
Buntong	4	0	
Pindulunan	14	0	
Dilabayan	7	0	
Calawa	56	4	
Buadiailawan	0	1	
Disumbing	11	0	
Dapan	1	0	
Magunayan	18	0	

* No report.

Smallpox statistics, by municipalities—Continued.

	Cases.	Deaths.	Mortality.
Lanao:—Continued.			<i>Per cent.</i>
Tubaran.....	53	8	
Malabang.....	35	3	
Pualas.....	53	3	
Madallum.....	106	4	
Tatarican.....	68	5	
Marantau.....	30	1	
Bayang.....	611	18	
Nunuñgan.....	25	2	
Total.....	2,700	164	6.07
Misamis:			
Cagayan.....	5	1	
Misamis.....	86	12	
Initao.....	17	5	
Aloran.....	9	2	
Mambajao.....	2	0	
Jimenez.....	34	11	
Tagoloan.....	2	0	
Total.....	155	31	20.00
Sulu:			
Siasi.....	2	1	
Total.....	2	1	50.50
Surigao:			
Surigao.....	23	10	
Hinatuan.....	19	4	
Dinagat.....	1	4	
Placer.....	9	1	
Total.....	52	19	30.64
Zamboanga:			
Zamboanga.....	179	20	
Margosatubig.....	82	31	
Gotas Camp.....	30	11	
Dapitan.....	10	0	
Isabela.....	1	0	
Dipolog.....	1	1	
Putik.....	3	1	
Mercedes.....	2	0	
Total.....	308	64	20.77

The provinces that remained infected at the close of the year were Cotabato, Davao, Misamis, Surigao, and Zamboanga.

The campaign against smallpox has been carried on very actively in view of the increment of the epidemic during the year. Transportation difficulties, the almost general antagonism of the non-Christians to oppose vaccination based on religious scruples and ignorance constitute few of the many handicaps of the Service in Mindanao and Sulu. Forty-one emergency hospitals were established at various times and places during the year.

MALARIA.

Malaria is a sanitary as well as an economic problem. Being the most prevalent disease in this division, it actually hinders the development of agricultural regions on account of its ill effects on immigrants. This is especially true in Davao where

abaca is the most important product. The water stored in the stalk of the abaca leaf is a breeding place of mosquitoes. Besides, the decaying pulp of the abaca trunk and the abundant shade afforded by the trees aid in the propagation of mosquitoes in the wet soil. This observation may partly explain the endemicity of malaria in Davao, where 900 cases were reported during the year. The new immigrants were preferably attacked and with a higher rate of mortality. In Lanao malaria is more prevalent in towns along the border of lake Lanao, which forms many fresh water swamps, than in those in the hinterland. While in Davao the establishment of sanitary barriers in elevated places cleared of trees will greatly reduce malaria, in Lanao a widening of the outlet of the lake (Agus River) so that its water level is lowered by at least one meter, will accomplish the same result. These two undertakings require a respectable appropriation, but they are projects well worth accomplishing. The liberal distribution of quinine among the people was resorted to as a means, indeed not very effective, to its control.

The cases registered in the different dispensaries during the year are as follows:

	<i>Cases.</i>
Agusan	946
Bukidnon	132
Cotabato	2,512
Davao	900
Lanao	1,670
Misamis	730
Sulu	6,460
Surigao	144
Zamboanga	1,172
Total	14,666

INFLUENZA.

The first case of influenza was recorded in the Province of Sulu on August 3, followed in September by two cases introduced by ships from Manila, Singapore and Sandakan; October and November saw the acme of the epidemic, attacking the health and hospital personnel and a large part of the Philippine Constabulary force.

The disease spread to the other provinces of this division and in November all of the provinces were practically infected. The acme of the epidemic was reached in the latter part of November and December. It is presumed that about 90 per cent of the total population was attacked. The Province of

Misamis was the most severely afflicted by the epidemic, 1,354 deaths having been registered in 12 municipalities. The Province of Agusan follows the Province of Misamis in the greatest number of deaths with 521.

Among the municipalities, Butuan, Cabadbaran, Dapitan, Dipolog, and Lubungan have recorded the highest percentage of mortality. Butuan recorded 93 deaths, Cabadbaran 107, Dapitan 117, Dipolog 259 and Lubungan, 88. In the municipality of Zamboanga, in spite of the large population, about 25,000, a total of only 105 deaths have been recorded. In spite of this, generally speaking, it can be said that the people of Mindanao and Sulu have been more fortunate than those in other towns of the Archipelago for not having many deaths to be lamented. The hospitals and dispensaries rendered the most valuable services to the community during the epidemic.

VENEREAL DISEASES.

The regular examination and supervision of registered prostitutes have contributed very little to the eradication of venereal diseases. If these diseases have spread as they are now, it was due to Christian and non-Christian prostitutes whose very low standard of living and lack of self-respect had rendered them callous to the shame and ignominy of a sentence to prison. Many times a Mora streetwalker is caught and sentenced to prison. She is imprisoned for a time after which she recurs to the same shameful profession. The remedy would seem to be the creation of a hospital of mercy where these unfortunates can be kept under constant surveillance. Isolation and imprisonment have lost to them their power of moral rehabilitation. They have to be considered as creatures of the state while their standard of living and morals is gradually being raised by education of the masses.

The arrival of the prostitutes from Manila also increased the incidence of gonorrhea. Out of a total of 130 cases reported in the Province of Davao, 126 occurred in the town of Davao. Once free from medical supervision, these girls began to spread around the province and with them the infection. This remittance was likened to an intravenous inoculation of the Province of Davao, with pathogenic organisms which spread all over its blood vascular system of transportation, and settled and developed in numerous foci all over its organism, perhaps never again to be rendered free from its effects.

Davao is especially prone to react to such a remittance because of the lack of women, and the use the men make of registered prostitutes. Of 1,952 laboratory specimens in Davao, 1,765 were uterine discharges from the prostitutes.

The following table taken from the reports of dispensaries and hospital shows the incidence of venereal diseases in the division:

	Gonor- rhea.	Syph- ilis.	Yaws.
Agusan	30		34
Cotabato	107	28	1
Davao	130	2	
Lanao	20	8	10
Misamis	20	15	
Sulu	119	21	194
Zamboanga	19	22	2
Total	445	96	241

DYSENTERY AND TYPHOID.

These two diseases go hand in hand, both being water-borne. The cases occurred throughout the year sporadically in most instances. The remittance of bacillus typhosus and the difficulty of proving its presence in the water supply explain the occurrence of the diseases endemically. Perhaps carriers contribute the larger part of the source of infection. Unlike a survey for intestinal parasites, the search for typhoid carriers is accompanied by very difficult technic. Like cholera, the bacillus typhosus lodges in the gall bladder from which it emerges intermittently and from which it is yet an unsolved scientific question to dislodge. While a universal campaign of typhoid vaccination, hard and tedious as it is, will greatly reduce the virulence of the attack, it does not insure the elimination of latent and active carriers. Experience in many American cities has shown that a marked reduction of the typhoid death rate by a process of chlorination of the water supply can be obtained. This process is cheap and practicable. It can be practiced by local authorities where a common water supply is available, or even by families by means of instructions from the health office. The process is simple, and the chlorinated water can be habituated to by the people.

Bacillary dysentery has prevailed with preference among Japanese in Davao. Of a total of 272 cases 165 occurred among Japanese. In Japan the Shiga strain prevails, and the most preferential incidence among them would seem to show either that the Japanese *per se* enjoy in the tropics a lower degree of

bodily resistance or that the Shiga strain in the tropics increases in virulence. In either case the introduction of the strain in the Islands should be avoided as much as possible by proper examination and isolation of the immigrants.

LEPROSY.

During the vaccination campaign, sanitary inspectors were directed to detect lepers also. In Lanao and Sulu leper collection was sometimes accompanied by threats of violent opposition. Prominent datos were asked to help, and they complied so tactfully that no actual accident happened.

Below are shown the reported cases and deaths (data for cholera, smallpox and malaria given above) :

	Agusan.		Bukidnon.		Cotabato.		Davao.		Lanao.		Misamis.		Sulu.		Surigao.		Zamboanga.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Typhoid	2	2	4	4	9	3	48	39	10	4	117	117	14	0	90	38	42	24	336	231
Dysentery	125	9	93	36	75	1	272	116	181	10	133	133	133	7	289	180	118	38	1,419	530
Leprosy			4	0	10	0	4	0	10	0	3	0	16	0	2	0	7	0	56	0
Diphtheria							1	1			3	3	4	3					8	7
Whooping cough	32	32	9	0	173	22	44	2	11	0	374	374			28	12	39	4	710	446
Varicella					1,004	56	53	1					56	0	1	0	5	0	1,119	57
Measles	4	0			1,114	24	108	10	28	0	12	2	50	0	3	0	28	1	1,347	37
Pulmonary tuberculosis	57	31	7	7	126	0	11	0	1	0	2	0	47	0			6	0	193	0
					135	14	46	39	52	35	378	378	37	12	96	96	129	129	937	741

NOTE.—It will be noted that there are some items which show 100 per cent mortality; this is so because only the number of deaths registered were recorded as cases. It has not been possible to search for other cases because most of the time was devoted to epidemics and other activities of more importance.

V.

DISPENSARIES.

The total number of dispensaries in operation during the year was 88, distributed as follows:

<i>In charge of physician.</i>		Davao	4
Agusan	1	Lanao	1
Cotabato	1	Sulu	4
Davao	3	Surigao	1
Lanao	1	<i>In charge of non-graduates.</i>	
Misamis	5	Agusan	2
Sulu	1	Bukidnon	4
Surigao	4	Cotabato	9
Zamboanga	2	Lanao	8
<i>In charge of graduate nurse.</i>		Misamis	10
Agusan	2	Sulu	8
Cotabato	3	Surigao	4
		Zamboanga	10

It will be noted that the number of dispensaries during the year is less than the number in 1917. The decrease is caused mainly by the resignations of many dispensary attendants, especially in the Province of Davao where better opportunities are offered on private plantations to men with experience in conducting dispensaries. These attendants, whenever they find better salaries with certain emoluments such as quarters, subsistence and the ownership of a piece of cultivated land, naturally have to retire from the Government service to accept such better remunerated offers.

Below is shown the consolidated report of dispensaries during the year:

Number and diagnosis.	Cases.	Treat- ment.
1. Typhoid fever	72	150
2. Typhus fever	2	10
3. Relapsing fever	39	71
4. Malaria	14,666	25,230
4a. Malaria Cachexia	27	107
5. Smallpox	3,166	11,291
6. Measles	182	705
7. Scarlet fever	1	3
8. Whooping cough	314	868
9a. Croup	1	1
10. Influenza	5,090	7,636
11. Miliary fever	3	15
12. Asiatic cholera	66	90
13. Cholera nostras	5	5
14. Dysentery	818	2,135
15. Plague	5	11
17. Leprosy	40	446
18. Erysipelas	13	27
19. Other epidemic diseases	2,257	5,557
20. Purulent infection and septicaemia	641	1,683
21. Glanders	2	9
22. Anthrax	18	114
23. Rabies	2	8
24. Tetanus	6	44
25. Mycoses	19	94
26. Pellagra	6	33
27. Beriberi	408	855
28. Tuberculosis of the lungs	361	867

Number and diagnosis.	Cases.	Treat- ment.
29. Acute miliary tuberculosis	2	14
30. Tuberculosis meningitis	2	4
31. Abdominal tuberculosis	1	9
32. Pott's disease	6	6
33. White swelling	22	183
34. Tuberculosis of other organs	82	223
35. Rickets	5	12
36. Syphilis	73	599
37. Gonococcus infection	262	1,890
38. Cancer and other malignant tumors of the buccal cavity	3	5
39. Cancer and other malignant tumors of the stomach, and liver	2	24
40. Cancer and other malignant tumors of the peritoneum, intestines, and rectum	5	26
41. Cancer and other malignant tumors of the female genital organs	4	17
42. Cancer and other malignant tumors of the breast	3	4
43. Cancer and other malignant tumors of the skin	28	82
44. Cancer and other malignant tumors of other organs and of organs not specified	15	34
45. Other tumors (tumors of the female genital organs excepted)	30	150
46. Acute rheumatism	430	1,306
47. Chronic rheumatism and gout	62	124
48. Scurvy	2	4
49. Diabetes	7	19
50. Exophthalmic goitre	1	1
51. Leuchemia	9	67
52. Anemia chlorosis	347	1,184
53. Other general diseases	183	862
54. Alcoholism (acute or chronic)	18	28
55. Chronic lead poisoning	1	6
56. Other chronic occupational poisonings	1	1
57. Other chronic poisonings	9	28
58. Encephalitis	8	14
59. Simple meningitis	16	20
60. Locomotor ataxia	2	4
61. Other diseases of the spinal cord	4	10
62. Cerebral hemorrhage apoplexy	6	6
63. Softening of the brain	3	14
64. Paralysis without specified cause	7	20
65. General paralysis of the insane	7	68
66. Other forms of mental alienation	9	12
67. Epilepsy	8	26
68. Convulsions (nonpuerperal)	8	13
69. Convulsions of infants	61	79
70. Chorea	2	2
71. Neuralgia and neuritis	738	1,091
72. Other diseases of the nervous system	110	167
73. Diseases of the eye and their annexa	1,833	4,991
74. Diseases of the ears	420	1,307
75. Pericarditis	6	7
76. Acute endocarditis	41	78
77. Organic diseases of the heart	39	93
78. Angina pectoris	12	16
79. Diseases of the arteries, atheroma, aneurism, etc	16	31
80. Embolism and thrombosis	1	9
81. Diseases of the veins (varices, haemorrhoids, phlebitis, etc.)	8	12
82. Diseases of the lymphatic system (lymphangitis, etc.)	37	154
83. Hemorrhage, and other diseases of the circulatory system	25	76
84. Diseases of the nasal fossae	263	530
85. Diseases of the larynx	50	119
86. Diseases of the thyroid body	3	5
87. Acute bronchitis	2,052	3,316
88. Chronic bronchitis	533	841
89. Broncho-pneumonia	38	107
90. Pneumonia	37	130
91. Pleurisy	31	95
92. Pulmonary congestion, pulmonary apoplexy	3	7
93. Gangrene of the lungs	1	1
94. Asthma	169	286
95. Pulmonary emphysema	4	6
96. Other diseases of the respiratory system (tuberculosis excepted)	325	601
97. Diseases of the mouth and annexa	1,033	1,867
98. Diseases of the pharynx	122	174
99. Diseases of the oesophagus	9	15
100. Ulcer of the stomach	77	169
101. Other diseases of the stomach (cancer excepted)	3,055	4,726
102. Diarrhoea and enteritis (under 2 years)	338	573
103. Diarrhoea and enteritis (2 years and over)	586	1,170
104. Ankylostomiasis	16	132
105. Intestinal parasites	5,333	6,348
106. Appendicitis and typhlitis	12	30
107. Hernias, intestinal obstructions	52	228
108. Other diseases of the intestines	620	841
109. Acute yellow atrophy of the liver	5	29
110. Cirrhosis of the liver	1	1
111. Other diseases of the liver	16	32
112. Diseases of the spleen	18	45
113. Simple peritonitis (non-puerperal)	10	23
114. Other diseases of the digestive system (cancer and tuberculosis excepted)	728	1,141

Number and diagnosis.	Cases.	Treat-ment.
119. Acute nephritis.....	38	86
120. Bright's disease.....	18	57
122. Other diseases of the kidneys and annexa.....	3	3
123. Calculi of the urinary passage.....	8	33
124. Diseases of the bladder.....	21	46
125. Other diseases of the urethra, urinary abscess, etc.....	17	63
126. Diseases of the prostate.....	2	16
127. Nonvenereal diseases of the male genital organs.....	41	178
128. Uterine hemorrhage (nonpuerperal).....	5	9
129. Uterine tumor (noncancerous).....	3	5
130. Other diseases of the uterus.....	76	152
131. Cysts and other tumors of the ovary.....	2	2
132. Salpingitis and other diseases of the female genital organs.....	5	12
133. Nonpuerperal diseases of the breast (cancer excepted).....	7	27
134. Accidents of pregnancy.....	70	129
135. Puerperal hemorrhage.....	24	77
136. Other accidents of labor.....	57	206
137. Puerperal septichaemia.....	4	14
138. Puerperal albuminaria and convulsions.....	5	5
139. Puerperal phlegmasia alba dolens, embolia, sudden death.....	1	1
140. Diseases following childbirth (not otherwise defined).....	146	217
141. Puerperal diseases of the breast.....	3	5
142. Gangrene.....	62	377
143. Furuncle.....	952	2,807
144. Acute abscess.....	1,054	3,576
145. Other diseases of the skin and annexa.....	14,645	35,657
146. Diseases of the bones (tuberculosis excepted).....	16	51
147. Diseases of the joints (tuberculosis and rheumatism excepted).....	28	104
148. Amputation.....	6	118
149. Other diseases of the organs of locomotion.....	162	395
150. Congenital malformation (stillbirths not included).....	8	84
151. Congenital debility, icterus and sclerema.....	17	26
152. Other diseases peculiar to early infancy.....	41	59
153. Lack of care.....	10	17
154. Senility.....	9	11
155. Suicide by poison.....	3	7
158. Suicide by drowning.....	1	1
160. Suicide by cutting or piercing instruments.....	33	61
161. Suicide by jumping from a high place.....	9	19
162. Suicide by crushing.....	3	9
163. Other suicides.....	20	67
164. Poisoning by food.....	9	21
165a. Venomous bites and stings.....	52	119
166. Conflagration.....	25	52
167. Burns (conflagration excepted).....	240	873
168. Absorption of deleterious gases (conflagration excepted).....	2	17
169. Accidental drowning.....	1	1
170. Traumatism by firearms.....	148	418
171. Traumatism by cutting or piercing instruments.....	2,950	9,933
172. Traumatism by fall.....	63	137
174. Traumatism by machines.....	18	44
175. Traumatism by other crushing (vehicles, railways, landslides, etc.).....	120	261
176. Injuries by animals.....	77	262
177. Starvation.....	1	1
178. Excessive cold.....	5	16
179. Effects of heat.....	14	29
182. Homicide by firearms.....	3	22
183. Homicide by cutting or piercing instruments.....	4	81
184. Homicide by other means.....	7	20
185. Fractures (cause not specified).....	47	205
186. Other external violence.....	2,248	7,051
187. Ill-defined organic diseases.....	153	431
188. Sudden death.....	5	5
189. Cause of death not specified or ill-defined.....	2,103	3,315
Total.....	74,842	164,496

Summary by districts.

	Cases.	Treat-ments.
Agusan.....	3,512	5,625
Bukidnon.....	1,017	1,017
Cotabato.....	22,045	63,102
Davao.....	3,127	10,937
Lanao.....	7,745	14,854
Misamis.....	4,007	8,020
Sulu.....	25,219	45,875
Surigao.....	714	714
Zamboanga.....	7,456	14,352
Total.....	74,842	164,496

VI.

HOSPITALS.

During the year the following hospitals were in operation in this division, namely: The Butuan Hospital in Butuan, Agusan; Cotabato Public Hospital, Cotabato, Cotabato; Mati Hospital, Mati, Davao; Lanao Public Hospital, Dansalan, Lanao; Misamis Provincial Hospital, Cagayan, Misamis; Sulu Public Hospital, Jolo, Sulu; Rizal Memorial Hospital, Dapitan, Zamboanga; and Zamboanga General Hospital, Zamboanga, Zamboanga. The Mati and Misamis hospitals are only provisional. The Zamboanga General Hospital was formally inaugurated on September 1, 1918. Patients began to be admitted on the following day. A concrete hospital building is now under construction in each of the municipalities of Davao, Davao, and Butuan, Agusan.

BUTUAN HOSPITAL.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
4. Malaria		70			64	6	
10. Influenza		16			15	1	
14. Dysentery		7			7		
17. Leprosy		1			1		
18. Erysipelas		1			1		
27. Beriberi	1	1			1	1	
31. Abdominal tuberculosis		1				1	
34. Tuberculosis of other organs		5	1	1	4	1	
46. Other tumors (tumors of the female genital organs excepted)		3	3		3		
47. Acute articular rheumatism		1			1		
48. Chronic rheumatism and gout		1			1		
54. Anæmia chlorosis		1			1		
61a. Meningitis, cerebro-spinal, epidemic		1			1		
64. Cerebral hemorrhage apoplexy		1				1	
68. Other forms of mental alienation	3	6			7	2	
69. Epilepsy		2			2		
72. Chorea		1			1		
73. Neuralgia and neuritis		6			4	1	1
75. Diseases of the eyes and their annexa		3	2	15	3		
79. Organic diseases		1			1		
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)						1	
85. Hæmorrhage, and other diseases of the circulatory system		1					
89. Acute bronchitis		3	2	9	3		
91. Broncho-pneumonia		3			3		
92. Pneumonia		4			4		
93. Pleurisy		5			3	1	1
103. Other diseases of the stomach (cancer excepted)		1			1		
104. Diarrhœa and enteritis (under 2 years)		4	1		4		
105. Diarrhœa and enteritis (2 years and over)		2			2		
106. Ankylostomiasis		3			3		
107. Intestinal parasites		3			3		
109. Hernia, intestinal obstructions		1	1	20	1		
110. Other diseases of the intestines		1			1		
113. Cirrhosis of the liver		1			1		
115. Other diseases of the liver		1	1	23	1		
119. Acute nephritis		3			3		
125. Other diseases of the urethra, urinary abscess, etc.		1			1		
127. Nonvenereal diseases of the male genital organs		1	1	1	1		
136. Other accidents of labor		1			1		
142. Gangrene		1		44	1		
143. Furuncle		1	1		1		
144. Acute abscess		3			3		
145. Other diseases of the skin and annexa		4			4		
147. Diseases of the joints (tuberculosis and rheumatism excepted)		2	1	3	1		1
148. Amputation		1	1		1		
151. Congenital debility, icterus and sclerema		1			1		
164. Poisoning by food		1			1		
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		1			1		
186. Other external violence		7	1	60	7		
Total	4	191	16	176	176	16	3

Summary and miscellaneous.

Total number of patients admitted during the year.....	191
Clinics:	
Dental	2
Medical	157
Surgical	28
Obstetrical	1
Eye, ear, nose, and throat.....	3
Nationalities of patients:	
Filipinos—	
Christians	190
Non-Christians	
Americans	1
Sex of patients:	
Male	168
Female	23
Class of service:	
Charity	103
Government free.....	2
Private pay.....	32
Government pay.....	54
Official pay.....	
Operations performed:	
Major—Filipinos (Christian).....	7
Charity	4
Private pay.....	3
Minor—Filipino (Christian).....	175
Charity	29
Private pay.....	146
Prescriptions filled:	
Charity	241
Private pay.....	2,399
Number of outside calls made by the medical hospital staff.....	309
Number of visits by out-patients.....	2,463
Average visits of out-patients per day.....	6.74

COTABATO HOSPITAL.

Hospital Cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever		2			1		1
4. Malaria	3	27			23	1	1
5. Smallpox		1		1	1		
8. Whooping cough		4			3		1
10. Influenza		73			62	1	10
14. Dysentery		4			4		
19. Other epidemic diseases		14		2	14		
20. Purulent infection and septichæmia	1	7	2	12	8		
24. Tetanus		2			2		
27. Beriberi		3			1	2	
28. Tuberculosis of the lungs		11			9	2	
31. Abdominal tuberculosis		1			1		
33. White swelling		1	1	1	1		

Cotabato Hospital—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
34. Tuberculosis of other organs		3	2	3	3		
37. Syphilis		2		3	2		
38. Gonococcus infection	1	8			9		
39. Cancer and other malignant tumors of the buccal cavity		1	1	1	1		
42. Cancer and other malignant tumors of the female genital organs		1		1	1		
44. Cancer and other malignant tumors of the skin	1	1	1	2			1
46. Other tumors (tumors of the female genital organs excepted)		2	2	4	2		
47. Acute articular rheumatism	1	2			3		
54. Anemia chlorosis		2			1		1
56. Alcoholism (acute or chronic)		1			1		
59. Other chronic poisonings		1			1		
73. Neuralgia and neuritis		4			4		
74. Other diseases of the nervous system		7			7		
75. Diseases of the eyes and their annexa		3		3	3		
76. Diseases of the ears		3	1	3	3		
79. Organic diseases of the heart		4			2	2	
81. Diseases of the arteries, atheroma, aneurysm, etc.		2			2		
83. Diseases of the veins (varices hemorrhoids, phlebitis, etc.)		1	1	1	1		
84. Diseases of the lymphatic system (lymphangitis, etc.)		3	2	4	3		
85. Hemorrhage, and other diseases of the circulatory system		1			1		
86. Diseases of the nasal fossæ		1			1		
89. Acute bronchitis		7			7		
91. Broncho-pneumonia		5			1	4	
92. Pneumonia		5			4		1
93. Pleurisy		3	1	1	3		
96. Asthma		1			1		
99. Diseases of the mouth and annexa	2	2	2	2	3		1
100. Diseases of the pharynx		2			2		
103. Other diseases of the stomach (cancer excepted)		14			14		
104. Diarrhoea and enteritis (under 2 years)		4			2	1	1
105. Diarrhoea and enteritis (2 years and over)		1					
106. Ankylostomiasis		8			7		1
107. Intestinal parasites		4			4		
108. Appendicitis and typhlitis		1	1	1	1		
109. Hernia, intestinal obstruction	1	2	2	7	3		
110. Other diseases of the intestines	1				1		
111. Acute yellow atrophy of the liver		1			1		
115. Other diseases of the liver		2			2		
120. Bright's disease		2	1	1		2	
123. Calculi of the urinary passages		2			2		
124. Diseases of the bladder		1	1	1	1		
125. Other diseases of the urethra, urinary abscess, etc.		1	1	1	1		
126. Diseases of the prostate		1			1		
127. Nonvenereal diseases of the male genital organs	1	4	2	6	5		
129. Uterine tumor (noncancerous)	1	1			1		
130. Other diseases of the uterus		2	2	4	2		
133. Nonpuerperal diseases of the breast (cancer excepted)		2	2	2	2		
134. Accidents of pregnancy		1			1		
135. Puerperal hemorrhage		3		4	3		
136. Other accidents of labor	1	13	1	11	13		1
143. Furuncle		1	1	1	1		
144. Acute abscess		13	13	17	13		
145. Other diseases of the skin and annexa	1	3		4	4		
146. Diseases of the bones (tuberculosis excepted)		1		2	1		
147. Diseases of the joints (tuberculosis and rheumatism excepted)				1			
149. Other diseases of the organs of locomotion		6	3		6		
150. Congenital malformations (stillbirths not included)	1	3	1	4	4		
151. Congenital debility, icterus and sclerema		1				1	
167. Burns (conflagrations excepted)		1		2	1		
171. Traumatism (by cutting or piercing instruments)		3	1	4	3		
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		1	1	1	1		
185. Fractures (cause not specified)	1	1	1	4	2		
186. Other external violence		7	2	8	6		1
Total	15	339	52	137	316	17	21

Summary and Miscellaneous.

Total number of patients admitted during the year.....	339
Clinics.	
Dental	
Medical	232
Surgical	84
Obstetrical	16
Eye, ear, nose, and throat.....	7
Nationalities of patients:	
Filipinos—	
Christians	253
Non-Christians	63
Americans	8
Europeans	2
Chinese	12
Asiatics	1
Sex of patients:	
Males	212
Females	127
Class of service:	
Charity	254
Private pay.....	43
Government pay.....	42
Operations performed:	
Minor—	
Filipino (Christian).....	106
Filipino (non-Christian).....	43
Europeans	1
Chinese	3
Major—	
Filipinos (Christian).....	9
Filipinos (non-Christian).....	2
Americans	1
Operations performed:	
Minor—	
Charity	127
Private pay.....	25
Government pay.....	1
Major—	
Charity	9
Government pay.....	2
Private pay.....	1
Prescriptions filled:	
Charity	3,766
Government free.....	148
Government pay.....	192
Private pay.....	670
Number of outside calls made by the medical hospital staff.....	170
Number of visits by out-patients.....	4,911
Average visits of out-patients per day.....	13.45

Statement of hospital accounts.

	Debit.	Credit.
Allowance for patients.....		₱2,232.16
Allowance for personnel.....		1,550.52
Expenditures for subsistence of patients and personnel	₱2,970.33	
Collections		4,075.87
Total	2,970.33	7,858.55
Balance		4,888.22

LANAO PUBLIC HOSPITAL.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever.....		9			5	3	1
4. Malaria.....	1	119			114		6
5. Smallpox.....		16			16		
8. Whooping cough.....		9			9		
10. Influenza.....		44			43		1
14. Dysentery.....	1	23			23	1	
18. Erysipelas.....		2			1		1
19. Other epidemic diseases.....		14		95	14		
20. Purulent infection and septicaemia.....		14		87	14		
24. Tetanus.....		3			3		
27. Beriberi.....		4			4		
28. Tuberculosis of the lungs.....	1	35			35		1
31. Abdominal tuberculosis.....		2	1		1	1	
34. Tuberculosis of other organs.....		2			2		
37. Syphilis.....	1	8		5	9		
38. Gonococcus infection.....		15			15		
45. Cancer and other malignant tumors of other organs and of organs not specified.....		1			1		
46. Other tumors (tumors of the female genital organs excepted).....	1	4	4	27	4		1
47. Acute articular rheumatism.....		5			5		
48. Chronic rheumatism and gout.....		2			2		
51. Exothalamic Goitre.....	1	1		3	2		
54. Anaemia, chlorosis.....	1	40			35		6
55. Other general diseases.....		1			1		
56. Alcoholism (acute or chronic).....		2			2		
64. Cerebral hemorrhage, apoplexy.....	1	1			2		
68. Other forms of mental alienation.....		5			5		
69. Epilepsy.....		1			1		
72. Chorea.....		1			1		
73. Neuralgia and neuritis.....		5			5		
74. Other diseases of the nervous system.....		5			5		
75. Diseases of the eyes and their annexa.....	4	15	6	26	19		
76. Diseases of the ears.....		4			4		
79. Organic diseases of the heart.....		4			4		
80. Angina pectoris.....		1			1		
81. Diseases of the arteries, atheroma, aneurism, etc.....		2			2		
83. Disease of the veins (varices, hemorrhoids, phlebitis, etc.....)	3	3	1	8	6		
84. Diseases of the lymphatic system (lymphangitis, etc.).....		8	1	8	8		
86. Diseases of the nasal fossae.....		11	2		11		
89. Acute bronchitis.....		50			50		
90. Chronic bronchitis.....		6			6		
91. Broncho-pneumonia.....		20			18	1	1
92. Pneumonia.....	1	13			11	1	2
93. Pleurisy.....		3			3		
96. Asthma.....		2			2		
99. Diseases of the mouth and annexa.....		9	6	16	9		
100. Diseases of the pharynx.....	1	29	17		28		2
103. Other diseases of the stomach (cancer excepted).....		36			36		
104. Diarrhoea and enteritis (under 2 years).....		3			3		
105. Diarrhoea and enteritis (2 years and over).....		1				1	
106. Ankylostomiasis.....	1	52			53		
107. Intestinal parasites.....		178			178		
108. Appendicitis and typhilitis.....	2	7	5	43	8		1
109. Hernia, intestinal obstructions.....		5	3	11	5		

Lanao Public Hospital—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
110. Other diseases of the intestines		5			4		1
114. Biliary calculi		1			1		
115. Other diseases of the liver		7			7		
119. Acute nephritis		3			3		
120. Bright's disease	1	7			6	2	
123. Calculi of the urinary passages	1	2	1	8	2	1	
124. Diseases of the bladder		7			7		
125. Other diseases of the urethra, urinary abscess, etc.		1			1		
126. Diseases of the prostate		1			1		
127. Nonvenereal diseases of the genital male organs		9	2	30	9		
129. Uterine Tumor (noncancerous)		1			1		
130. Other diseases of the uterus	1	29	7		30		
131. Cysts and other tumors the ovary		2	2	15	2		
132. Salpingitis and other diseases of the female genital organs		2	1		2		
134. Accidents of pregnancy	1	19			19		1
136. Other accidents of labor		10	1	5	10		
137. Puerperal septicaemia		1			1		
138. Puerperal albuminaria and convulsions		1			1		
140. Following childbirth (not otherwise defined)		5			5		
142. Gangrene		1			1		
143. Furuncle		6	4	21	6		
144. Acute abscess		15	14	58	15		
145. Other diseases of the skin and annexa	3	55	2	66	54	1	3
146. Diseases of the bones (tuberculosis excepted)		4	2	10	4		
149. Other diseases of the organs of locomotion		1			1		
151. Congenital debility, icterus and sclerema		5		4	5		
152. Other diseases peculiar to early infancy		2			1	1	
167. Burns (conflagrations excepted)		2		3	2		
170. Traumatism by firearms		3	2	54	3		
171. Traumatism by cutting or piercing instruments		6	2	24	6		
185. Fractures (cause not specified)		1			1		
186. Other external violence	2	11	1	27	11		2
Total	29	1,080	89	654	1,066	13	30

Summary and Miscellaneous.

Total number of patients admitted during the year..... 751

Clinics:

Medical	879
Surgical	124
Eye, ear, nose and throat	46
Obstetrical	26
Dental	4

Nationality of patients:

Filipinos—	
Christians	606
Non-Christians	97
Americans	30
Chinese	7
Japanese	9
Europeans	2

Sex of patients:

Males	470
Females	281

Summary and Miscellaneous—Continued.

Class of service:	
Charity	440
Government free.....	121
Private pay.....	64
Government pay.....	126
Operations performed:	
Minor—	
Filipinos (Christians).....	94
Filipinos (non-Christians).....	6
Americans	2
Japanese	1
Europeans	1
Major—	
Filipinos (Christians).....	13
Americans	1
Operations performed:	
Minor—	
Charity	78
Government free.....	12
Private pay.....	14
Major—	
Charity	10
Private pay.....	2
Government free.....	2
Prescriptions filled:	
Charity	828
Government free.....	159
Private pay.....	53
Number of outside calls made by the hospital medical staff.....	51
Number of visits by out-patients.....	1,401
Average visits of out-patients per day.....	3.83

Statements of Hospital Accounts.

	<i>Debit.</i>	<i>Credit.</i>
Allowance for patients.....		₱3,480.44
Allowance for personnel		2,285.93
Expenditures for subsistence of patients and personnel	₱4,344.52	
Collections		3,686.92
Total	4,344.52	9,653.29
Balance		5,308.77

MISAMIS PUBLIC HOSPITAL.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining
4. Malaria		14			12	1	1
10. Influenza		61			58	3	
14. Dysentery		2			2		
18. Erysipelas		1		15	1		
22. Anthrax		1	1	1	1		
27. Beriberi		4			2	1	1
37. Syphilis		1		37	1		
38. Gonococcus infection		2	16	2	2		
73. Neuralgia and neuritis		1		41	1		
75. Diseases of the eyes and their annexa		2		15	2		
76. Diseases of the ears		1		1	1		
90. Chronic bronchitis		2			2		
92. Pneumonia		1			1		
95. Gangrene of the lungs		1			1		
104. Diarrhoea and enteritis (under two years)		1					1
106. Ankylostomiasis		2			2		
107. Intestinal parasites		2			2		
110. Other diseases of the intestines		1	1	18	1		
144. Acute abscess		9	4	231	9		
145. Other diseases of the skin and annexa		2	2	7	2		
167. Burns (conflagrations excepted)		1		2		1	
171. Traumatism by cutting or piercing instruments		4	2	285	4		
172. Traumatism by fall		4		7	4		
174. Traumatism by machines		2		14	2		
186. Other external violence		3		66	3		
Total		125	26	742	116	6	3

Summary and Miscellaneous.

Total number of patients admitted during the year.....	125
Clinics:	
Medical	35
Surgical	14
Nationality of patients:	
Filipinos (Christians)	125
Sex of patients:	
Males	114
Females	11
Class of service:	
Charity	24
Government pay	15
Government free	55
Private pay	31
Operations performed:	
Minor—	
Filipinos (Christians)	1
Operations performed:	
Minor—	
Private pay	1
Number of outside calls made by hospital medical staff.....	20

SULU PUBLIC HOSPITAL.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever	1	14		1	14		1
4. Malaria	1	89			86	1	3
6. Measles		3			3		
10. Influenza		77			75	1	1
14. Dysentery		10			10		
19. Other epidemic diseases	1	8		75	9		
20. Purulent infection		9	1	53	8	1	
24. Tetanus		1		5	1		
27. Beriberi	1	28			26		3
28. Tuberculosis of the lungs		6			6		
33. White swelling	1				1		
34. Tuberculosis of other organs		8	2	33	8		
37. Syphilis		8			8		
38. Gonococcus infection	3	40			43		
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum		1			1		
46. Other tumors (tumors of the female genital organs excepted)		10	9	42	9		1
47. Acute articular rheumatism		12			12		
48. Chronic rheumatism and gout		3			3		
55. Other general diseases		1			1		
56. Alcoholism (acute or chronic)		1			1		
59. Other chronic poisonings		2			2		
61. Simple meningitis		2			2		
64. Cerebral hemorrhage apoplexi		3	2	4	2	1	
69. Epilepsi		1			1		
72. Chorea		1			1		
73. Neuralgia and neuritis		15			15		
74. Other diseases of the nervous system		2			2		
75. Diseases of the eyes and their annexa		4	1	15	4		
76. Diseases of the ears		3	2	10	3		
77. Pericarditis		1	1	1	1		
79. Organic diseases of the heart		2			1	1	
83. Diseases of the veins (verices hemorrhoids)		2		7	2		
84. Diseases of the lymphatic system (lymphangitis, etc.)		6	2	25	6		
86. Diseases of the nasal fossæ		3			3		
88. Diseases of the thyroid body		1	1	15	1		
89. Acute bronchitis		20			19	1	
91. Broncho-pneumonia		11			11		
92. Pneumonia		14			10	4	
93. Pleurisy		2			2		
94. Pulmonary congestion, pulmonary apoplexi		2			2		
96. Asthma		8			8		
99. Diseases of the mouth and annexa		2			2		
100. Diseases of the pharynx		4			4		
102. Ulcer of the stomach		3			3		
103. Other diseases of the stomach (cancer excepted)		21		6	21		
104. Diarrhoea and enteritis (under 2 years)		15			13	2	
106. Ankylostomiasis		1			1		
107. Intestinal parasites		5			5		
108. Appendicitis and typhlitis	1	13	13	137	14		
109. Hernia, intestinal obstructions		1			1		
110. Other diseases of the intestines		3	3	32	3		
115. Other diseases of the liver		4	2	34	3	1	
116. Diseases of the spleen		1	2		1		
117. Simple peritonitis (nonpuerperal)		2	1		1	1	
119. Acute nephritis		5			4	1	
120. Bright's diseases		1			1		
122. Other diseases of the kidneys and annexa		1			1		
123. Calculi of the urinary passages		2			1		1
124. Diseases of the bladder		1			1		
125. Other diseases of the urethra, urinary abscess		2			2		
127. Nonvenereal diseases of the male genital organs		4	3	66	4		
130. Other diseases of the uterus	1	7			8		
131. Cysts and other tumors of the ovary		2	2	24	2		
132. Salpingitis and other diseases of the female genital organs		6	2	38	6		
134. Accidents of pregnancy		6	1	5	5		1
136. Other accidents of labor		67		236	65		2
137. Puerperal septicaemia		3	1	18	3		
138. Puerperal albuminaria and convulsions		1			1		
140. Following childbirth (not otherwise defined)		2			2		

Sulu Public Hospital—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
143. Furuncle.....		4	2	12	4		
144. Acute abscess.....		16			16		
145. Other diseases of the skin and annexa.....		17	2	181	16		1
146. Diseases of the bones (tuberculosis excepted).....		4	2	20	4		
149. Other diseases of the organs of locomotion.....		1			1		
150. Congenital malformations (stillbirth not included).....		5	5	28	5		
151. Congenital debility, icterus and sclerema.....		2			1	1	
165a. Venomous bites and stings.....		2			2		
165b. Other acute poisonings.....		1			1		
167. Burns (conflagration excepted).....		2		17	2		
170. Traumatism by firearms.....		3		101	2	1	
171. Traumatism by cutting or piercing instruments.....		7	2	60	7		
175. Traumatism by other crushing vehicles, railways, landslides, etc.).....		7			7		
183. Homicide by cutting or piercing instruments.....		7		308	5	2	
185. Fractures (cause not specified).....		6		16	6		
185. Other external violence.....		18	3	131	16		2
Total.....	10	721	67	1,756	696	19	16

Summary and Miscellaneous.

Total number of patients admitted during the year..... 721

Clinics:

Medical	351
Surgical	138
Eye, ear, nose and throat.....	14
Obstetrical	48
Genito-urinary	40
Pediatrics	130

Nationality of patients:

Filipinos—

Christians	420
Non-Christians	221
Americans	8
Chinese	39
Japanese	16
Europeans	1
Others	16

Sex of patients:

Males	480
Females	241

Class of service:

Charity	394
Government pay.....	211
Private pay.....	116

Summary and Miscellaneous—Continued.

Operations performed:

Minor—

Filipinos (Christians)	128
Filipinos (non-Christians)	225
Americans	8
Chinese	36
Japanese	8

Major—

Filipinos (Christians)	14
Filipinos (non-Christians)	4
Chinese	1
Others	1

Operations performed:

Minor—

Charity	296
Government pay	54
Private pay	55

Major—

Charity	7
Government pay	11
Private pay	2

Prescriptions filled:

Charity	1997
Government pay	1162
Private pay	933

Number of outside calls made by the hospital medical staff..... 192

Number of visits by out-patients..... 16,682

Average visits of out-patients per day..... 45.70

Statements of Hospital Accounts.

	Debit.	Credit.
Allowance for patients		₱5,031.83
Allowance for personnel		1,919.71
Expenditures for subsistence of patients and personnel ₱4,947.03		
Collections		7,509.52
Total	4,947.03	14,461.06
Balance		9,514.03

ZAMBOANGA GENERAL HOSPITAL.*Hospital cases.*

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever		3				2	1
4. Malaria		9			7		2
5. Smallpox		1				1	
10. Influenza		89			85		4
12. Asiatic cholera		27			14	13	
14. Dysentery		1			1		
19. Other epidemic diseases		3		25	3		

Zamboanga General Hospital—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
20. Purulent infection and septichæmia		6			4	1	1
24. Tetanus		1				1	
27. Beriberi		14			11	2	1
28. Tuberculosis of the lungs		8			7	1	
31. Abdominal tuberculosis		4	1	30	4		
34. Tuberculosis of other organs		4	4	40	4		
38. Gonococcus infection		6		16	5		1
40. Cancer and other malignant tumors of the stomach and liver		1				1	
48. Chronic rheumatism and gout		4			4		
50. Diabetes		1				1	
63. Other diseases of the spinal cord		1				1	
66. Paralysis without specified cause		1			1		
68. Other forms of mental alienation		1			1		
73. Neuralgia and neuritis		14			12		2
74. Other diseases of the nervous system		7			6		1
75. Diseases of the eyes and their annexa		2		24	2		
76. Diseases of the ears		1		15			1
78. Acute endocarditis		2				2	
79. Organic diseases of the heart		3			3		
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		2	1		2		
84. Diseases of the lymphatic system (lymphangitis, etc.)		1	1	10	1		
85. Hæmorrhage, and other diseases of the circulatory system		2			2		
89. Acute bronchitis		5			3		2
90. Chronic bronchitis		2			2		
92. Pneumonia		9			4	4	1
93. Pleurisy		3	1	20			1
96. Asthma		1			3		
99. Diseases of the mouth and annexa		3	1	20	1		
100. Diseases of the pharynx		1			2	1	
102. Ulcer of the stomach		2			1	1	
103. Other diseases of the stomach (cancer excepted)		3			3		
104. Diarrhoea and enteritis (under 2 years)		15			12	1	2
105. Diarrhoea and enteritis (2 years and over)		7			7		
106. Ankylostomiasis		3			3		
107. Intestinal parasites		8			7		1
108. Appendicitis and typhlitis		2	2	13	2		
109. Hernia, intestinal obstruction		4	3	35	3		1
110. Other diseases of the intestines		2		65	2		
117. Simple peritonitis (nonpuerperal)		1	1		1		
119. Acute nephritis		5			3	2	
122. Other diseases of the kidneys and annexa		1					1
124. Diseases of the bladder		1			1		
127. Nonvenereal diseases of the male genital organs		1	1	15			1
130. Other diseases of the uterus		8	4		7		1
132. Salpingitis and other diseases of the female organs		2	1		2		
133. Nonpuerperal diseases of the breast		1	1	12	1		
134. Accidents of pregnancy		12			11		1
135. Puerperal hæmorrhage		4	3		4		
136. Other accidents of labor		12	1		11		1
137. Puerperal septichæmia		2	2		1	1	
140. Following childbirth (not otherwise defined)		1			1		
143. Furuncle		3	3	32	1		2
144. Acute abscess		10	7	67	8		2
145. Other diseases of the skin and annexa		10	1	23	10		
146. Diseases of the bones (tuberculosis excepted)		1	1	5	1		
147. Diseases of the joints (tuberculosis and rheumatism excepted)		1	1	20			1
150. Congenital malformations (stillbirth not included)		1				1	
164. Poisoning by food		1				1	
167. Burns (conflagrations excepted)		1					1
171. Traumatism by cutting or piercing instruments		7	5	99	6		1
172. Traumatism by fall		4	1	30	4		
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		15	9	90	13		2
186. Other external violence		5			5		
187. Ill-defined organic diseases		2			2		
Total		401	56	726	327	38	36

Summary and Miscellaneous.

Total number of patients admitted during the year.....	309
Clinics:	
Medical	179
Surgical	67
Eye, ear, nose and throat.....	3
Obstetrical	18
Pediatrics	42
Nationality of patients:	
Filipinos—	
Christians	286
Non-Christians	10
Chinese	6
Japanese	6
Other nationalities.....	1
Sex of patients:	
Males	216
Females	93
Class of service:	
Charity	78
Government pay.....	142
Private pay.....	89
Operations performed:	
Minor—	
Filipinos—	
Christians	47
Non-Christians	1
Major—	
Filipinos	8
Operations performed:	
Minor—	
Charity	9
Government pay.....	7
Private pay.....	5
Major—	
Charity	1
Government pay.....	2
Prescriptions filled:	
Charity	127
Government pay.....	303
Private	165
Number of outside calls made by hospital medical staff.....	17
Number of visits by out-patients.....	501
Average visits of out-patients.....	4.1

Hospital Accounts.

	Debit.	Credit.
Allowance for patients.....		₱1,489.85
Allowance for personnel.....		1,210.77
Expenditures for subsistence of patients and personnel	₱2,160.31	
Collections		2,130.21
Total	2,160.31	4,830.83
Balance		2,670.52

RIZAL MEMORIAL HOSPITAL.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operated.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever.....	4	12			4		
4. Malaria.....	2	2			2		
6. Measles.....	40	7			36	4	
10. Influenza.....	1	1			6	1	
14. Dysentery.....	1	1			1		
20. Purulent infection and septichæmia.....	10	4			9	1	
22. Anthrax.....	1	1			1		
27. Beriberi.....	4	1			4		
28. Tuberculosis of the lungs.....	1	1			1		
29. Acute miliary tuberculosis.....	2	1	16		2		
34. Tuberculosis of other organs.....	1	1			1		
40. Cancer and other malignant tumors of the stomach, liver.....	1	1			1		
42. Cancer and other malignant tumors of the female genital organs.....	1	1			1		
46. Other tumors (tumor of the female genital organs excepted).....	1	1	6		1		
47. Acute articular rheumatism.....	1	1			1		
68. Other forms of mental alienation.....	1	1			1		
73. Neuralgia and neuritis.....	4	4			4		
79. Organic diseases of the heart.....	2	2			2		
80. Angina pectoris.....	1	1			1		
85. Hæmorrhage, and other diseases of the circulatory system.....	1	8			1		
89. Acute bronchitis.....	6	6			6		
90. Chronic bronchitis.....	1	1			1		
91. Broncho-pneumonia.....	2	2			1	1	
96. Asthma.....	6	6			6		
99. Diseases of the mouth and annexa.....	2	2			2		
103. Other diseases of the stomach (cancer excepted).....	9	9			9		
104. Diarrhœa and enteritis (under 2 years).....	8	8			8		
105. Diarrhœa and enteritis (2 years and over).....	6	6			6		
106. Ankylostomiasis.....	1	1			1		
107. Intestinal parasites.....	8	8			8		
108. Appendicitis and typhlitis.....	1	1			1		
110. Other diseases of the intestines.....	1	1			1		
115. Other diseases of the liver.....	1	1			1		
120. Bright's disease.....	1	1			1		
123. Calculi of the urinary passages.....	1	1			1		
124. Diseases of the bladder.....	1	1			1		
130. Other diseases of the uterus.....	6	1	4		6		
133. Nonpuerperal diseases of the breast (cancer excepted).....	1	5			1		
134. Accidents of pregnancy.....	43	2			43		
136. Other accidents of labor.....	60				59	1	
137. Puerperal septichæmia.....	1				1		
143. Furuncle.....	1		5		1		
144. Acute abscess.....	1				1		
145. Other diseases of the skin and annexa.....	3		5		3		
149. Other diseases of the organs of locomotion.....	1				1		
151. Congenital debility, icterus and sclerema.....	25				25		
152. Other diseases peculiar to early infancy.....	1					1	
171. Traumatism by cutting or piercing instruments.....	4	1	8		4		
172. Traumatism by fall.....	1				1		
185. Fractures (cause not specified).....	3				3		
186. Other external violence.....	2				2		
189. Cause of death not specified or ill defined.....	1				1		
Total.....		306	7	57	296	10	

Summary and Miscellaneous.

Total number of patients admitted during the year.....	306
Clinics:	
Medical	108
Surgical	27
Obstetrical	65
Eye, ear, nose, and throat.....	1
Pediatrics	41
Feeding cases.....	64
Nationality of patients:	
Filipinos (Christians).....	305
Chinese	1
Sex of patients:	
Males	125
Females	181
Class of service:	
Charity	121
Government pay.....	34
Private pay.....	151
Operations performed:	
Minor—	
Filipinos (Christians).....	6
Major—	
Filipinos (Christians).....	3
Operations performed:	
Minor—	
Charity	4
Private pay.....	2
Major—	
Private pay.....	2
Government pay.....	1
Prescriptions filled:	
Charity	203
Government pay.....	95
Private pay.....	390
Number of outside calls made by the hospital medical staff....	96
Number of visits by out-patients.....	1,595
Average visits of out-patients per day.....	4.36

Statements of Hospital Accounts.

	Debit.	Credit.
Allowance for patients.....		₱1,226.89
Allowance for personnel.....		824.07
Expenditures for subsistence of patients and personnel	₱1,410.03	
Collections		2,077.32
Total	1,410.03	4,128.28
Balance		2,718.25

VII.

LABORATORIES.

There were, during the year, 10 laboratories in operation, one in each of the Provinces of Agusan, Davao, Lanao, Misamis, Sulu and Surigao, and two each in the Provinces of Cotabato and Zamboanga. Besides the bacteriological routine work in the hospitals, the laboratories rendered invaluable help in making a study of the prevalence of intestinal parasites and in the prompt and early detection of communicable diseases. The Zamboanga laboratory, located at Zamboanga, serves as the central laboratory where examinations have been and are being made for the other provinces of the division.

Below are shown the number of examinations performed during the year:

Agusan laboratory:	
Blood	246
Urine	177
Stools	142
Sputum	20
Discharges	12
Total	597
Cotabato laboratory:	
Blood	131
Urine	125
Stools	200
Sputum	9
Discharges	113
Total	578
Davao laboratory:	
Blood	39
Urine	39
Stools	95
Sputum	13
Discharges	1,766
Total	1,952
Lanao laboratory:	
Blood	20
Urine	482
Stools	511
Sputum	8
Discharges	35
Total	1,056

Misamis laboratory:

Blood	835
Urine	178
Stools	1,837
Sputum	12

Total	2,862
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Sulu laboratory:

Blood	101
Urine	441
Stools	397
Sputum	34
Discharges	76

Total	1,049
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Zamboanga laboratory:

Blood	74
Urine	354
Stools	1,148
Sputum	61
Discharges	540
Water	78
Miscellaneous	12

Total	2,267
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VIII.**SAN RAMON PENAL FARM.**

Till the arrival of a colony physician, the medical attendance of the about 600 inmates of San Ramon Penal Farm has been done by the municipal health officer of Zamboanga, stationed at Zamboanga. There was one dispensary at the San Ramon Penal Farm in charge of one attendant.

On July 7, 1918, the colony physician arrived. Of course, medical attendance and sanitation were improved. The prisoner's diet was also improved. Several operations were performed.

Hospital summary:

Number of cases admitted.....	1,052
Number of operations performed.....	36
Number of dressings.....	1,071
Number of deaths.....	38
Number remaining.....	21

Dispensary summary:

Number of cases admitted (July to December).....	1,555
Number of treatments (July to December).....	31,117

Dangerous communicable diseases registered among the inmates:

	Cases.	Deaths.
Cholera	1	1
Varicella	23	0
Pulmonary tuberculosis.....	23	8
Dysentery	15	1
Mumps	127	0
Dengue fever.....	1	0
Typhoid fever.....	1	1
Grippe	220	0

It is recommended that the hospitals facilities and supplies be increased in order that the health of the inmates may be properly cared for.

IX.

WATER SUPPLIES.

There are six sources of water supply in this division for either drinking or domestic purposes, namely: (1) artesian wells, (2) rain water, (3) springs, (4) rivers, (5) surface wells and (6) distilled water.

Due perhaps to physical peculiarities of certain provinces of this division and to the lack of funds in general, the perforation of artesian wells could not be extended throughout all the provinces. During the year only the Provinces of Agusan, Lanao, Misamis, and Zamboanga had artesian wells. They are located as follows: Agusan Province—Butuan 7, Cabadbaran 12, and the municipal district 3; Lanao Province—Iligan 2; Misamis Province—Cagayan 1; and Zamboanga Province—Dapitan 7, and Lubungan 1. In Surigao, perforation of a well was tried four times but all in vain. In Cotabato an attempt also failed.

Rain water is used in all the provinces, but only by very few and mostly well-to-do people. Only Agusan has tanks, one of which has a capacity of 3,000 gallons, wherein rain water is stored for public consumption.

Distilled water is only purchasable in the provincial capitals of Cotabato, Sulu and Zamboanga, but only very few, mostly the well-to-do class, use it for drinking purposes on account of its extra cost.

Springs abound in many places, especially in Sulu. In the municipal district of Jabonga, Province of Agusan, the water of a spring, which is considered potable, is piped to the town. In Parang, Cotabato, there is one spring from which the inhabitants get their drinking water. The municipalities of the Island of Camiguin, Misamis, are provided with water piped from a

spring. The water system in the municipalities of Balingasag and Cagayan are yet under construction. Jolo and Siasi, Province of Sulu, are well supplied with potable water from good springs brought to the people by gravity. The municipality of Maluco and the barrio of Dalirig, Province of Bukidnon, are also provided with water by gravity; in Malaybalay, the capital, a system is under construction and will be inaugurated in the near future. The necessary appropriations have already been provided for the construction of water systems in the municipalities of Placer, Bacuag and Lianga, Province of Surigao. The systems are now under construction. The waterworks plan for Surigao, the capital, is now under construction. The municipality of Zamboanga and adjoining barrios are supplied with potable water piped from the Pasonanca reservoir. The following is a report of the water examinations from March to December 1918, inclusive, of the Pasonanca water. There were 28 examinations.

[From Zamboanga Laboratory.]

	Number of samples.	Positives.	Negatives.
Presumptive test	28	3	25
Bacillus coli	28	28	28
Amcebae	28	1	27
Ciliates	28	13	15
Flagelletes	28	25	3
Number of colonies per cc		From 30 to 1,500	
Cholera vibrio	28		28

Where the sources above-mentioned are not available, the inhabitants, mostly of the barrios and remote districts, depend on well and river water which is easily contaminated.

As a matter of curiosity this office has requested the district health officers to include in the annual report an answer to the following question: "What is the one thing you will recommend that in your opinion will render the best service in the interest of public health in your district for the year 1919?" Of the eight answers received, Lanao, Cotabato, Zamboanga, Sulu, Davao, and Surigao recommended good water supply.

X.

DISPOSAL OF EXCRETA.

There are at present three approved ways of disposal of excreta in practice in the division, namely: (1) The septic tank, (2) the "Antipolo" and (3) the pail systems. Emphasis has been and is being laid on the safe disposal of human waste as one of the

principal sanitary measures, but due to the peculiar condition existing in the various municipalities and municipal districts the practice cannot at once be put into general use. This is especially true among the non-Christians whose religious belief on the matter is in controversy with modern systems. Their religion dictates that human waters must be made to fall first on a work of nature; hence their custom of defecating in rivers and streams from which they take their water for drinking and domestic purposes. However, in the organized municipalities the "Antipolo" system is now being adopted and at the close of the year, besides those under construction, the following table shows the number of "Antipolo" toilets in each province:

No. of "Antipolo" toilets.	
Agusan	828
Bukidnon	1
Cotabato	165
Davao	40
Misamis	5,436
Surigao	7,364
Zamboanga	1,207
Total	15,041

XI.

VITAL STATISTICS.

Due to the failure of the majority of the municipality officials to appreciate the value of vital statistics, our efforts in securing them have not as yet given the desired results. This is especially true among the Mohammedans who constitute the larger portion of the population. The data from the Christians are more reliable.

Below is shown the data reported:

Marriages for the calendar year 1918.

Provinces.	Total marriages.	Nationality.				Single males married to females.		
		Filipinos.	Other Europeans.	Chinese.	Other Asiatics.	Single.	Widowed.	Divorced.
Agusan.....	170	170				139	23	1
Bukidnon.....	56	56				27	7	
Cotabato.....	64	64				54	6	3
Davao.....	287	286		1		232	12	
Lanao.....	89	89				86	3	
Misamis ^a	1,504	1,501	1	2		1,304	25	
Sulu.....	5	5				5		
Surigao.....	995	995				387	272	
Zamboanga.....	655	638		14	3	598	19	1
Total	3,825	3,804	1	17	3	2,832	367	5

Marriages for the calendar year 1918—Continued.

Provinces.	Widowed males married to females.			Nationality of females.		
	Single.	Widowed.	Divorced.	Filipinos.	Chinese.	Other Asiatics.
Agusan.....	1	6		170		
Bukidnon.....	11	11		56		
Cotabato.....		1		64		
Davao.....	18	25		286	1	
Lanao.....				89		
Misamis ^a	103	71	1	1,502	2	
Sulu.....				5		
Surigao.....	198	138		995		
Zamboanga.....	27	9	1	638	14	3
Total.....	358	261	2	3,805	17	3

^a Up to September 30th only.

Marriages by age.

AGUSAN.

Males.		Females.							
Ages.	Num-ber.	Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 30 years.	30 to 40 years.	40 to 50 years.	Over 50 years.	
Under 15 years.....									
15 to 20 years.....	82		82						
20 to 25 years.....	48		6	42					
25 to 30 years.....	18		1	1	16				
30 to 40 years.....	14			1	1	12			
40 to 50 years.....	3					2	1		
Over 50 years.....	5						5		
Total.....	170		89	44	17	14	6		

BUKIDNON.

Under 15 years.....	2	2							
15 to 20 years.....	18	8	7	1	2				
20 to 25 years.....	18	8	8	2					
25 to 30 years.....	15	2	8	4	1				
30 to 40 years.....	3		1	2					
40 to 50 years.....									
Over 50 years.....									
Total.....	56	20	24	9	3				

COTABATO.

Under 15 years.....	1	1							
15 to 20 years.....	18	8	10						
20 to 25 years.....	30	8	16	5	1				
25 to 30 years.....	11	2	5	2	2				
30 to 40 years.....	2				2				
40 to 50 years.....	1					1			
Over 50 years.....	1					1			
Total.....	64	19	31	7	5	2			

Marriages by age—Continued.

DAVAO.

Males.		Females.						
Ages.	Num-ber.	Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 30 years.	30 to 40 years.	40 to 50 years.	Over 50 years.
Under 15 years	9	9						
15 to 20 years	74	19	53	2				
20 to 25 years	117	14	68	32	3			
25 to 30 years	42		22	13	6	1		
30 to 40 years	36		15	14	4	1	1	1
40 to 50 years	9			2	4	2	1	
Over 50 years								
Total	287	42	158	63	17	4	2	1

LANAO.

Under 15 years	11	4	4	3				
15 to 20 years	21	9	9	3				
20 to 25 years	41	3	20	14	4			
25 to 30 years	9		4	2	3			
30 to 40 years	6		3	1	2			
40 to 50 years	1					1		
Over 50 years								
Total	89	16	40	23	9	1		

MISAMIS.

Under 15 years	116	107	8		1			
15 to 20 years	549	105	389	50	4	1		
20 to 25 years	492	43	280	154	15			
25 to 30 years	215	13	79	69	51	3		
30 to 40 years	81	8	21	19	16	17		
40 to 50 years	37	1	7	7	13	7	2	
Over 50 years	14			1	1	5	1	6
Total	1,504	277	784	300	101	33	3	6

SULU.

Under 15 years								
15 to 20 years	1		1					
20 to 25 years	3	1	1	1				
25 to 30 years	1				1			
30 to 40 years								
40 to 50 years								
Over 50 years								
Total	5	1	2	1	1			

SURIGAO.

Under 15 years	28	10	8	5	4	1		
15 to 20 years	316		82	92	70	57	15	
20 to 25 years	289	5	123	109	80	52	20	
25 to 30 years	141		45	42	27	20	7	
30 to 40 years	80	2	24	22	19	9	4	
40 to 50 years	37	1	11	9	8	5	3	
Over 50 years	4				2	1	1	
Total	995	18	293	279	210	145	50	

Marriages by age—Continued.

ZAMBOANGA.

Males.		Females.						
Ages.	Num-ber.	Under 15 years.	15 to 20 years.	20 to 25 years.	25 to 30 years.	30 to 40 years.	40 to 50 years.	Over 50 years.
Under 15 years	9	8	1					
15 to 20 years	170	13	131	20	5	1		
20 to 25 years	256	6	169	72	6	2	1	
25 to 30 years	134	3	61	47	17	6		
30 to 40 years	60		15	17	15	13		
40 to 50 years	17		5	4	2	4	2	
Over 50 years	9			1		3	4	1
Total	655	30	382	161	45	29	7	1

SUMMARY BY AGES.

Under 15 years	176	141	21	8	5	1		
15 to 20 years	1,249	162	764	168	81	59	15	
20 to 25 years	1,394	88	691	431	109	54	21	
25 to 30 years	586	20	225	180	124	30	7	
30 to 40 years	282	10	79	76	59	52	5	1
40 to 50 years	105	2	23	22	27	22	9	
Over 50 years	33			2	3	10	11	7
Total	3,825	423	1,803	887	408	228	68	8

Births reported.

District.	Americans.	Filipinos.	Other Asiatics.	Chinese.	Other nationalities.	Total.
Agusan		605				605
Bukidnon		567				567
Cotabato		312		1		313
Davao		932				932
Lanao		181				181
Misamis*		6,180		1		6,181
Sulu	1	204	3	29		237
Surigao		2,163				2,163
Zamboanga	1	1,001	1	4	1	1,008
Total	2	12,145	4	35	1	12,187

* Up to September 30th only.

SUMMARY.

District.	Number of births.	Annual birth rate per 1,000 population.
Agusan	605	26.92
Bukidnon	567	27.08
Cotabato	313	31.71
Davao	932	22.10
Lanao	181	11.97
Misamis	6,181	46.61
Sulu	237	10.24
Surigao	2,163	23.17
Zamboanga	1,008	12.37
Total	12,187	27.62

Deaths reported.

District.	Americans.	Filipinos.	Euro-peans.	Chinese.	Other Asiatics.	Other nationalities.	Total.
Agusan		854					854
Bukidnon		346					346
Cotabato		270	1	6			277
Davao ^a	1	1,230		17	90	61	1,399
Lanao		381	1				382
Misamis ^b		5,825		4			5,829
Sulu	1	204		29	3		237
Surigao		2,390	1	11			2,402
Zamboanga	1	2,243		16	2		2,262
Total	3	13,743	3	83	95	61	13,988

^a In addition to the total of 1,399 deaths, there are 148 deaths whose nationalities were not reported, thus making a total of 1,547 deaths.

^b Up to September 30th only.

SUMMARY BY PROVINCES.

District.	Number of deaths.	Annual death-rate per 100 population.
Agusan	854	38.00
Bukidnon	346	16.52
Cotabato	277	28.06
Davao	1,547	36.68
Lanao	382	25.28
Misamis	5,829	43.95
Sulu	237	10.24
Surigao	2,402	25.73
Zamboanga	2,262	27.76
Total	14,136	32.04

It will be noted that, in spite of the epidemics of smallpox, cholera and influenza, the number of deaths compared with that of births is only 1,949 in excess of the latter, but taking into consideration the fact already stated in previous reports that no non-Christian births have ever been reported while deaths among them, especially during epidemics, are registered as far as possible, it can be seen that the loss to the community is practically nil.

Deaths reported by ages.

	Agusan.	Bukidnon.	Cotabato.	Davao. ^a	Lanao.	Misamis. ^b	Sulu.	Surigao.	Zamboanga.	Total.
Under 30 days	62		25	49	8	512	59	137	154	821
30 days to under 1 year	156	1	51	149	47	1,497	26	276	446	2,075
1 year to under 2 years	50	16	38	139	52	521	10	251	131	1,056
2 years to 4 years	68	32	42	128	46	645	16	242	206	1,224
5 years to 9 years	67	37	24	98	40	438	11	277	196	1,056
10 years to 14 years	84	23	11	67	53	221	10	149	88	645
15 years to 19 years	54	26	17	123	44	196	7	164	106	693
20 years to 29 years	74	33	23	210	33	456	30	177	231	1,110
30 years to 39 years	66	49	15	169	23	367	17	172	224	1,004
40 years to 49 years	67	35	16	124	17	263	17	134	149	741
50 years to 59 years	37	42	3	55	10	228	17	148	106	574
60 years to 69 years	23	25	7	48	5	210	7	108	86	452
70 years to 79 years	23	14	2	25		97	6	79	55	268
80 years to 89 years	13	8		9	2	92	4	56	38	197
90 years to 99 years	6	4		3	1	31		25	24	83
100 years and over	4	1	1	3	1	48		3	6	54
Age not stated			2			7		4	16	29
Total	854	346	277	1,399	382	5,829	237	2,402	2,262	12,092

^a In addition to the total of 1,399 deaths there are 148 deaths whose ages were not reported, thus making a total of 1,547 deaths.

^b Up to September 30th only.

Cases of deaths reported.

Number and diagnosis.	Agusan.	Bukidnon.	Cotabato.	Davao. ^a	Lanao.	Misamis. ^b	Sulu.	Surigao.	Zamboanga.	Total.
1. Typhoid fever	2	4	3	34	4	117		13	24	201
2. Typhus fever		12		5		7		4	2	30
3. Relapsing fever		43		129				117	3	292
4. Malaria	187	88	1	156	24	944	53	186	152	1,791
4a. Malarial cachexia	3		1	1		2		68	8	83
5. Smallpox			78	250	164	12	1	7	28	540
6. Measles			3			18				21
7. Scarlet fever									1	1
8. Whooping cough	32		22	2		374		12	4	446
9. Diphtheria and croup						3		1		4
9a. Croup		2				4		2		8
10. Influenza	276	121	56	49	16	86	11	297	606	1,518
11. Military fever	1					2				3
12. Asiatic cholera	73				39	754		431	100	1,347
13. Cholera nostras	1								19	20
14. Dysentery	9	36	1	116	10	133	5	180	38	528
15. Erysipelas	1		1			44	1			47
19. Other epidemic diseases		1	2			82				85
20. Purulent infection and septi- chæmia						7			19	26
22. Anthrax	1	1		1		27		1	4	35
23. Rabies						1				1
24. Tetanus	5	1	4	6	1	11	1		2	31
27. Beriberi	18	9	6	108	3	462	9	39	223	877
28. Tuberculosis of the lungs	31	7	14	33	10	378	12	96	129	710
29. Acute miliary tuberculosis				3		1		23	1	28
31. Abdominal tuberculosis					1	3			2	6
32. Pott's disease						4			3	7
33. White swelling						12				12
34. Tuberculosis of other organs			2	3		7			8	20
36. Rickets			2					2	5	9
37. Syphilis				3					3	6
38. Gonococcus infection						1				1
39. Cancer and other malignant tumors of the buccal cavity						5		1	2	8
40. Cancer and other malignant tumors of the stomach, liver			1			5		2	3	11
41. Cancer and other malignant tumors of the peritoneum rectum			1			2				3
42. Cancer and other malignant tumors of the female genital organs						2				2
43. Cancer and other malignant tumors of the breast	1					2		2	1	6
44. Cancer and other malignant tumors of the skin						19		1	1	21
45. Cancer and other malignant tumors of other organs and of organs not specified						6			3	9
46. Other tumors (tumors of the female genital organs ex- cepted)						6				6
47. Acute articular rheumatism				5		14		5	3	27
48. Chronic rheumatism and gout	2		1	1	1	10		6	3	24
49. Scurvy						11		1		12
50. Diabetes						1			3	4
51. Exophthalmic goitre								1		1
52. Addison's disease							1			1
54. Anæmia chlorosis		2	1	1	1	3		9	6	23
55. Other general diseases				13			3	222	2	240
56. Alcoholism (acute or chronic)						1		2		3
58. Other chronic occupational poi- sonings				1						1
59. Other chronic poisonings				2						2
60. Encephalitis			1			2				3
61. Simple meningitis		1	1	23		4		7	15	51
61a. Meningitis, cerebro spinal, epi- demic				2			1		1	4
64. Cerebral hæmorrhage, apoplexy	2		4	4		1	2	4	8	25
65. Softening of the brain								1	3	4
66. Paralysis without specified cause	1					18	1	4	7	31
67. General paralysis of the insane						1			2	3
68. Other forms of mental alienation				2				1	1	4

^a In addition to the total of 1,399 deaths there are 148 deaths whose causes of death, nationalities, ages and civil status were not reported, thus making a total of 1,547 deaths.

^b Up to September 30th only.

Number and diagnosis.	Agusan.	Bukidhon.	Cotabato.	Davao. ^a	Lanao.	Misamis. ^b	Sulu.	Surigao.	Zamboanga.	Total.
69. Epilepsy		1			1	52				54
70. Convulsions (nonpuerperal)				5	1	12				24
71. Convulsions of infants	89	13	3	71		544	33	58	188	999
72. Chorea						6				7
73. Neur. Iria and neuritis	1			1	1	10	1		4	17
74. Other diseases of the nervous system						2	2	6		10
75. Diseases of the eyes and their annexa						3			3	6
77. Pericarditis									1	1
78. Acute endocarditis			1	4					11	16
79. Organic diseases of the heart	1		2	1		9	3	2	10	28
80. Angina pectoris				1		1		1		3
81. Diseases of the arteries, atheroma, aneurysm, etc.									2	2
82. Embolism and thrombosis								2	1	3
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)								1		1
84. Diseases of the lymphatic system (lymphangitis, etc.)								1		1
85. Hemorrhage, and other diseases of the circulatory system			1	1		3		2	2	9
86. Diseases of the nasal fossae						2			1	3
87. Diseases of the larynx						1		1		2
88. Diseases of the thyroid body			1			1			2	4
89. Acute bronchitis			2	16	12	107	12	65	42	256
90. Chronic bronchitis	13		2	20	2	124		15	23	199
91. Broncho-pneumonia	49		5	63	8	163	8	4	46	346
92. Pneumonia	15		5	9	6	30	5	1	6	77
93. Pleurisy	2			2		12				16
94. Pulmonary congestion, pulmonary apoplexy								21	3	25
96. Asthma	2	2	1	8	1	13	3	10	6	46
97. Pulmonary emphysema				5				2	1	8
98. Other diseases of the respiratory system (tuberculosis excepted)				13		2	1	26	1	43
99. Diseases of the mouth and annexa						2			2	4
100. Diseases of the pharynx						2			2	4
101. Diseases of the esophagus				2		1				3
102. Ulcer of the stomach				5		8		4	6	23
103. Other diseases of the stomach (cancer excepted)	1		1	14		18	1	8	3	46
104. Diarrhoea and enteritis (under 2 years)			4	19	9	69	4	16	14	135
105. Diarrhoea and enteritis (2 years and over)	6	2	2	11	3	36		17	24	101
106. Ankylostomiasis			2			3		1	4	10
107. Intestinal parasites	4			2	3			4	8	21
108. Appendicitis and typhlitis				1		3			2	6
109. Hernia, intestinal obstructions			1	2		6		2	9	20
110. Other diseases of the intestines			3	1		5		3	8	20
111. Acute yellow atrophy of the liver								3		3
113. Cirrhosis of the liver						1		1		2
114. Biliary calculi							1			1
115. Other diseases of the liver				2					3	5
116. Diseases of the spleen				1		2		1	1	5
117. Simple peritonitis (nonpuerperal)				3		2	2		1	8
118. Other diseases of the digestive system (cancer and tuberculosis excepted)	1		1	3	2	6		7	1	21
119. Acute nephritis				3	5	18	4	10	5	45
120. Bright's diseases			1			3	3		7	14
121. Chyluria				1			1		3	5
122. Other diseases of the kidneys and annexa						1				1
123. Calculi of the urinary				1	1	1		5		8
124. Diseases of the bladder			1			2		3		6
126. Diseases of the prostate				1						1
127. Nonvenereal diseases of the male genital organs						1				1
128. Uterine hemorrhage (nonpuerperal)			1	1		1		1		

Cases of deaths reported—Continued.

Number and diagnosis.	Agusan.	Bukidnon.	Cotabato.	Davao. ^a	Lanao.	Misamis. ^b	Sulu.	Surigao.	Zamboanga.	Total.
131. Cysts and other tumors of the ovary									1	1
132. Salpingitis and other diseases of the female genital organs								1		1
134. Accidents of pregnancy	2		1	2	1	7		8	15	36
135. Puerperal hemorrhage	1		1	2		13	1	6	6	30
136. Other accidents of labor	6		1	3	1	17		13	4	45
137. Puerperal septicaemia						19	2		4	25
138. Puerperal albuminaria and convulsions						1				1
139. Puerperal phlegmasia, alba dolens, embolus, sudden death						2				2
140. Following childbirth (not otherwise defined)						2			3	5
142. Gangrene				1		7		3	3	14
143. Furuncle						54		7		61
144. Acute abscess				6		27		4	4	41
145. Other diseases of the skin and annexa				1		53		8	1	63
146. Diseases of the bones (tuberculosis excepted)				1		5				6
147. Diseases of the joints (tuberculosis excepted)								7		7
149. Other diseases of the organs of locomotion						2				2
150. Congenital malformation (stillbirths not included)						5	3	1	3	12
151. Congenital debility, icterus and sclerema	16		4	7	2	223	11	66	68	397
152. Other diseases peculiar to early infancy	3		3	13	1	87	4	55	20	186
153. Lack of care	29		6	7		10		58	72	182
154. Senility	8		2	16		111	9	39	69	254
155. Suicide by poison						1				1
156. Suicide by asphyxia								1		1
157. Suicide by hanging or strangulation						4				4
159. Suicide by firearms				1			1		1	3
160. Suicide by cutting or piercing instruments				1					1	2
161. Suicide by jumping from high place						1		1		2
162. Suicide by crushing						1				1
164. Poisoning by food					1			1	1	3
165a. Venomous bites and stings	1					2		4		7
165b. Other acute poisonings						2		2		4
166. Conflagration			1			1		4	1	7
167. Burns (conflagration excepted)	1		1	4		5			1	12
169. Accidental drowning	4			1		6	2	2	3	18
170. Traumatism by firearms				1			3	4	4	12
171. Traumatism by cutting or piercing instruments				7		3	12		2	24
172. Traumatism by fall				4		7			3	14
173. Traumatism in mines and quarries						1				1
174. Traumatism by machines						1				1
175. Injuries by animals			1							2
177. Starvation						1			1	2
178. Excessive cold			3							3
179. Effects of heat			3							3
180. Lightning						2				2
183. Homicide by cutting or piercing instruments				2		3	3	3		11
184. Homicide by other means								1		1
185. Fractures (cause not specified)				1				1	3	5
186. Other external violence									2	3
187. Ill-defined organic diseases			1	2		2		4		9
188. Sudden death				3	1	7		14		25
189. Cause of death not specified or ill-defined	3		2	66	46	231		23	61	432
Total	854	346	277	1,399	382	5,829	237	2,402	2,262	13,98

Deaths reported by civil status.

Civil status.	Agusan.	Bukidnon.	Cotabato.	Davao. ^a	Lanao.	Misamis. ^b	Sulu.	Surigao.	Zamboanga.	Total
Married.....	182	112	52	367	66	1,132	58	650	594	3,213
Widowed.....	20	71	15	83	11	389	21	185	179	974
Divorced.....	30		3			3	4			40
Single.....	135	64	34	362	64	471	22	264	243	1,659
Children.....	487	99	167	452	227	2,834	132	1,303	1,220	7,921
Condition not stated in certificates.....			6	135	14				36	181
Total.....	854	346	277	1,399	382	5,829	237	2,402	2,262	13,988

^a In addition to the total of 1,399 deaths, there are 148 deaths whose nationalities, ages and civil status were not reported, thus making a total of 1,547 deaths.

^b Up to September 30th only.

XII

CEMETERIES.

There were at the beginning of the year 269 cemeteries in operation; 20 were opened or reopened and 8 closed during the year. The following table shows the number of cemeteries in each province at the close of the year.

	Number of cemeteries.
Agusan	24
Bukidnon	13
Cotabato	7
Davao	51
Lanao	5
Misamis	96
Sulu	7
Surigao	63
Zamboanga	15
Total	281

Only in very few organized municipalities cemeteries are kept in a satisfactory sanitary condition. Other cemeteries, the majority of which are used by Mohammedans only, are not maintained according to the requirements.

XIII.

INFANT WELFARE.

The work of district nurses and midwives consists mainly of house-to-house inspection, advice to mothers and parturient women on the care of infants before and after delivery. Private and public lectures were given on the subject as often as possible. As far as practicable hospitals and dispensaries give free service to sick children. It is gratifying to be able to assert that mothers are now becoming accustomed to call on the district nurses and midwives for advice and help and not very few of them (mothers) now prefer to deliver in the hospitals rather than in their homes.

During the year there were in all 14 women's clubs, 1 in Cotabato, 1 in Lanao, 5 in Misamis, 1 in Sulu, 3 in Surigao, and 3 in Zamboanga. The work of the clubs so far on infant welfare may be classified as initial and cannot be pushed forward with rapidity because of the many handicaps, notably the lack of funds and proper personnel.

Three baby contests were held during the year, 2 in Jolo and 1 in Cotabato.

The problem of infant mortality in this division is about the same as in other parts of the Islands—ignorance of the mothers of pre-and-post partum, care of themselves and of the care of infants. The effect of beriberi is also the same. The solution would seem to lie in (1) educational campaign work with reference to the care of infants, and (2) improvement of the diet of the mothers, actual and prospective.

Below is shown a summary of the work done by the district nurses and midwives:

Zamboanga:

Number of women given instructions during pregnancy.....	234
Number of women attended by local "parteras" and visited by midwives	76
Premiparae	20
Multiparae	56
Number of women attended during labor.....	99
Premiparae	20
Multiparae	79
Average age.....years.....	27
Average duration of pregnancy.....months.....	9
Average duration of labor.....hours.....	5
Kind of presentation—	
Head	94
Breach	2
Foot	3
Average length of time before the expulsion of placenta	30
Fetus—	
Alive (48 males—48 females).....	96
Premature, male.....	1
Abortion	0
Stillborn, male.....	2
Complications (cases with bleeding).....	4
Complications (cases with infection).....	1
Extraction of placenta.....	6
Average duration of convalescence.....days.....	8
Number of deaths among children of cases attended (stillbirths excluded) (4 males—3 females).....	7
Number of visits during pregnancy.....	384
Number of visits after labor.....	540

Zamboanga—Continued.

Number of women attended during labor—Continued.

Average number of visits to each patient during pregnancy and after labor.....	9
Average number of visits made per day.....	2.5
Number of women at present receiving instructions on nursing and on hygiene of pregnancy.....	17

Surigao (July to December):

Maternity service—

Number of young girls instructed on hygiene.....	1,632
Number of prospective mothers instructed.....	269
Number of confinements attended.....	2
Number of women delivered.....	162
Number of women cared postpartum.....	76
Number of women refusing assistance during labor (assisted by local midwives).....	160

General data of mothers—

Average age (extremes).....years....	18-44
Premiparae	49
Multiparae	113
Legal status—	
Married	157
Unclassified pregnancy outside legal sanction.....	5

Character of labor—

Abortion	1
Premature	2
Normal	155
Abnormal	4
Average duration of labor (extremes).....hours....	1-8
Average duration of third stage.....do.....	1-2

Maternal condition—

Normal delivery.....	157
Abnormal complications.....	5

Foetal condition—

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	67	88						
Dead						1	4	2
Breast fed	67	88						

Average weight (extremes).....grams.... 1,100-3,250

Average duration falling off of cord.....days.... 2-7

Babies born normal..... 68

Children—

Number under one year old visited.....	69
Breast fed.....	69
Number of children treated.....	35
Number of mothers instructed on maternal hygiene..	60
Number of mothers given treatment.....	40
Number of mothers instructed in care of babies.....	202
Number of visits made antepartum.....	86
Number of visits made postpartum.....	89
Average visit per patient.....visits....	2-8

Surigao (July to December)—Continued.

Maternity service—Continued.

General data of mothers—Continued.

Sanitary inspection—

Number of houses visited to give instruction on home sanitation.....	226
Number of houses maintained sanitary.....	53
Number of houses induced to use potable drinking water supply.....	115
Number of houses advised to install adequate disposal of human waste.....	144
Number of houses using adequate disposal of human waste	600
Septic tanks.....	2
Antipolo systems.....	2
Pail systems.....	266
Number of houses in poblacion of Surigao.....	600

Social service—

Number of women instructed in domestic art.....	213
Number of patients visited in reference to follow up cases (convalescent).....	27
Number of patients nursed in their home.....	56
Approximate number of families in poblacion of Surigao only.....	434
Approximate number of population in poblacion of Surigao only.....	11,170

Miscellaneous—

Classes of patients—

Government free.....	20
Charity	106

Cotabato (July to December):

Maternity service—

Number of young girls instructed in hygiene.....	370
Number of prospective mothers instructed.....	78
Number of confinements attended.....	33
Number of women delivered.....	29
Number of women cared postpartum (delivered by midwife, local)	10
Number of women refusing assistance during labor.....	2

General data of mothers—

Average age (extremes).....years.....	18-35
Primiparae	2
Multiparae	37
Legal status—	
Married	39

Character of labor—

Abortion	1
Premature	2
Normal	32
Abnormal	4
Average of duration of labor (extremes).....hours.....	2-11
Average duration of the third state.....do.....	2-5

Cotabato (July to December)—Continued.

Maternal condition—

Normal delivery.....		33
Abnormal complications.....		6
	C.	D.
Malpresentation of fetus.....	1	1
Placentae previae.....	1	0
Retained placenta.....	2	0
Crede	5	0
Manual	27	0
Puerperal fever.....	2	1
Obstructing tumors.....	1	0
Duration of puerperium.....	days....	7-14

Foetal condition—

	Normal.		Premature		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive.....	14	16		1		1		1
Dead.....		1		2		1	1	1

Breast fed.....	36
Bottle fed.....	3
Average weight (extremes).....	Not stated.
Average duration falling off of the cord.....	days.... 3-6
Average duration of cicatrization of umbilicus.....	do..... 3-13
Babies born ill.....	4

Children—

Number of children under 1 year old visited.....	C.	D.
	142	
Breast fed.....	135	0
Bottle fed.....	7	0
Number of children treated.....	137	
Number of mothers instructed in maternal hygiene.....	173	
Number of mothers given treatment.....	133	
Number of mothers instructed on care of babies.....	198	
Number of visits made antepartum.....	38	
Number of visits made postpartum.....	66	
Average of visits per patient.....	days.... 2-11	

Sanitary inspection—

Number of houses visited to give instruction on home sanitation	306
Number of houses maintained sanitary.....	165
Number of homes induced to use potable drinking water.....	155
Number of houses using potable drinking water supplies....	248
Number of houses advised to install adequate disposal of human waste.....	176
Number of houses using adequate disposal of human waste..	229
Pit systems.....	106
Antipolo systems.....	26
Pail systems.....	24
Number of houses in the district (about).....	968

Cotabato (July to December)—Continued.

Social service—

Number of women instructed in domestic art.....	245
Number of women secured employment.....	122
Number of women referred to agency or society for maternal relief	122
Number of patients visited in reference to follow-up cases (convalescent)	105
Number of patients given nursing care at home.....	95
Number of families in the district.....	1,952
Approximate number of population in the district.....	4,363

Miscellaneous—

Classes of patients:

Government free.....	290
Government pay.....	1
Private pay.....	11
Charity	293

Total fees collected.....	pesos..... 6
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Davao (July to December):

Maternity service:

Number of young girls instructed in hygiene.....	35
Number of prospective mothers instructed.....	25
Number of confinements attended.....	7
Number of women delivered.....	7
Number of women cared postpartum (delivered by midwife, local)	5
Number of women refusing assistance during labor.....	0

General data of mothers—

Average ages (extremes).....	years..... 29
Primiparae	3
Multiparae	4

Legal status—

Married	6
Widowed	1

Character of labor—

Abortion	1
Normal	4
Abnormal	2
Average of duration of labor (extremes).....	hours..... 12
Average of duration of the third state.....	do..... 4

Maternal condition—

Normal delivery.....	5
Abnormal complication.....	2
Hemorrhage	2 0
Duration of puerperium.....	days..... 7

Foetal condition—

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive.....	3	3						
Dead					1			

Breast fed	6
Bottle fed	1

Davao (July to December)—Continued.

Maternity service—Continued.

Foetal condition—Continued.

Average weight (extremes).....	grams....	2,634
Average duration falling off of the cord.....	days....	5
Average of cicatrization of umbilicus.....	do.....	7
Babies born ill.....		0
Babies born normal.....		7

Children—

Number of children under 1 year old visited....		35
---	--	----

	C.	D.
Breast fed.....	31	.....
Bottle fed.....	4	.....

Number of children treated.....	70
Number of mothers instructed in maternal hygiene..	30
Number of mothers given treatment.....	6
Number of mothers instructed in the care of babies..	35
Number of visits made on antepartum.....	61
Number of visits made on pastpartum.....	83
Average visit per patient.....	10

Sanitary inspection—

Number of houses visited to give instruction on home sanitation.....	47
Number of houses maintained sanitary.....	29
Number of houses induced to use potable drinking water supplies.....	23
Number of houses using potable drinking water supplies	28
Number of houses advised to install adequate dis- posal of human waste.....	19
Number of houses using adequate disposal of human waste	295
Flush toilets.....	2
Septic tanks.....	4
Antipolo systems.....	5
Pail systems.....	263
Number of houses in the district.....	263

Social service—

Number of women instructed in domestic art.....	31
Number of patients visited in reference to follow up cases (convalescent).....	1
Number of families in the district.....	276
Approximate number of population in the district..	14,00

Miscellaneous—

Classes of patients—	
Government free.....	4
Private pay.....	2
Charity	20
Total collection of fees.....	pesos... 45.00

XIV.

MEDICAL INSPECTION OF SCHOOLS.

In view of the fact that most of the attention of the health personnel was absorbed by epidemics, and the lack of transportation, the inspections have not been carried out with more frequency.

The most predominant ailments were dental caries, skin diseases and tonsillitis. The percentage of dental caries among pupils is amazing and steps should certainly be taken to assign dental surgeons in the various towns and municipalities to treat them.

The following is a summary of the inspection done and the diseases found during the year:

Provinces.	Number of pupils inspected.	Diseases found.						Dental caries.
		Scabies.	Tonsillitis.	Conjunctivitis.	Per-tussis.	Contagious skin diseases.	Contagious eye diseases.	
Agusan.....	104					11		
Bukidnon.....	2,804	24	2	37	1	22	1	13
Cotabato.....	905	106	116	6	2	63	17	199
Davao.....	1,195	1	6	3		131	4	136
Lanao.....	373	38	95	2		4	60	145
Misamis.....	4,149	277	467	83		60	11	604
Sulu.....	418	58	167	3		67	4	221
Surigao.....	1,878	74	34	11		15		165
Zamboanga.....	1,212	96	8			3		132
Total.....	13,038	674	895	145	3	376	97	1,615

XV.

MARKETS AND SLAUGHTERHOUSES.

All the provinces of this division, except Bukidnon, count with at least one concrete market. All of these are located at the provincial capitals, except the Lanao market which is at Malabang. This market at Malabang is of mixed material construction, having a concrete floor and light material superstructure. Jolo, the capital of Sulu, has two concrete markets. At the close of the year there were in all 14 concrete markets distributed as follows: Agusan 1; Cotabato 2; Davao 1; Lanao 1, Misamis 2; Sulu 3; Surigao 4, and Zamboanga 1. The rest of the markets are of provisional construction. They are located over the sea where refuse is directly disposed of. This is common among the Mohammedans.

All the municipalities where there are concrete markets have sanitary ordinances regarding their maintenance, consequently the concrete markets in general are kept in a satisfactory sani-

tary condition. Venders of ready made food are obliged to screen from flies the foodstuff offered for sale. Tiendas are required to provide buyers with forks, knives and spoons and sufficient drinking glasses. In the Province of Sulu most venders furnish forks and knives. Drinking water is placed in proper receptacles provided with faucets. Special Order No. 12, series of 1917, was issued by this office to regulate the sale of tuba. Garbage cans are adequately furnished. Caretakers to keep the markets clean are always employed. The provisional markets cannot be kept in a sanitary condition in view of their defective structures.

There are as yet very few slaughterhouses of permanent construction in this division. The following towns have slaughterhouses: Misamis, 2; Sulu, 1; Surigao, 2; and Zamboanga, 1. The one in Sulu needs certain improvements, such as provisions for running water and for boiling water. In General, these slaughterhouses are maintained in a practically sanitary way. Agusan is expecting to have 2 during 1919. Davao has one slaughterhouse of temporary construction.

XVI.

VACCINATION.

Two difficulties were encountered in vaccination: (1) Insufficiency and unsatisfactory kind of vaccine virus and (2) the natural disinclination of people to be vaccinated and even actual opposition by the Mohammedans. Among the latter, the health service was often placed in a very unfavorable position. After preaching the efficacy of vaccination against smallpox they allowed themselves to be vaccinated. With the virus supplied, the vaccination did not prevent or attenuate the smallpox epidemic. They even suspected that the vaccination brought on the epidemic.

Below is shown the consolidated report of vaccinations performed during the year:

	Vaccinations	Inspections	Positive	Negative
Agusan	20,382	14,374	6,441	7,933
Bukidnon	3,442	3,087	2,266	821
Cotabato	33,467	17,087	8,057	9,030
Davao	24,514	17,880	12,545	5,335
Lanao	31,260	14,721	10,799	3,922
Misamis	20,236	14,745	7,212	7,533
Sulu	2,100	2,080	874	1,206
Surigao	14,462	10,201	4,693	5,508
Zamboanga	26,796	13,880	8,943	4,937
Total	176,659	108,055	61,830	46,225

XVII.

EXTRACTS FROM THE REPORT OF THE DISTRICT
HEALTH OFFICER.

COMMON DISEASES (RECORDED IN THE DISPENSARIES).

	Cases.
4. Malaria	946
10. Influenza	343
14. Dysentery	125
19. Other epidemic diseases.....	75
75. Diseases of the eyes and their annexa.....	91
89. Acute bronchitis.....	89
103. Other diseases of the stomach, (cancer excepted).....	106
110. Other diseases of the intestines.....	135
145. Other diseases of the skin and annexa.....	474
186. Other external violence.....	523

Death rate.—The high mortality rate was due to cholera in the first 2 months, to influenza in the last 2 months of the year and to the high mortality among infants. Forty-one and sixty per cent of all deaths among infants below 1 year of age occurred in the last quarter of 1918, coincident with the influenza epidemic. Peculiarly enough, the records do not show high mortality ascribed to convulsions and beriberi. This is explained by the fact that potato and other vitamin-containing foods form a large part of the staple food of the Agusan population.

Municipal sanitation.—Butuan uses both the Antipolo and the pail systems of disposal of excreta. There are two cemeteries, one market of concrete construction, 7 artesian wells and a tank for rain water with capacity of 3,000 gallons.

Cabadbaran has the Antipolo system, 2 cemeteries, one temporary building for market, 12 artesian wells.

Talacogon has the Antipolo system and 2 cemeteries. No appropriate market and water supply.

The province is composed of 3 organized municipalities and 5 municipal districts. The population is composed of Christians and non-Christians. These are peaceful, non-abusive nomadic people.

BUKIDNON.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Cases.
10. Influenza	788
4. Malaria	132
14. Dysentery	49

Municipal sanitation.—Malaybalay has the pit system of waste disposal, one municipal cemetery and one provisional market. Water is obtained mainly from rainfall and springs.

Maluco has a gravity system of water supply.

The population is mainly composed of non-Christians. The few Christians present came from Misamis.

COTABATO.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Cases.
145. Other diseases of the skin and annexe.....	5,189
4. Malaria	2,512
5. Smallpox	1,840
19. Other epidemic diseases.....	1,669
186. Other external violence.....	1,146
103. Other diseases of the stomach (cancer excepted).....	1,073
10. Influenza	1,049
107. Intestinal parasites.....	1,003
75. Diseases of the eyes and their annexe.....	378

Next to skin disease, malaria stands as the most common disease of the province, where it is constantly endemic and at times epidemic. Most of the cases are associated with splenomegalia.

Municipal sanitation.—Cotabato uses the pail and Antipolo systems of waste disposal. There are one Catholic, one Chinese and one municipal cemeteries; one market and one slaughterhouse. Three-fourths of the people use distilled water; the rest use rain water. Rabies is unknown in the municipality for the last 5 years.

One hundred seventy-four sanitary orders were issued during the year.

Parang has the pail system of waste disposal; one Christian and one Chinese cemetery; one market; its water is derived from Alfonso XIII springs.

Silik (municipal district) is inhabited by Christians and non-Christians. The former use the Antipolo system, the latter defecate in the rivers and streams.

Pikit-Pagaluñgan (municipal district).—One female district nurse is undertaking obstetrical and infant welfare work. There exists one municipal cemetery in the district in fair sanitary condition. This is used by Christians only. The non-Christians are still following their old custom of burrying their dead at the side of their house.

Glan (municipal district).—The Antipolo system is used in the agricultural colony and the pail system in Glan itself.

Water supplies.—Cotabato derives its water from the distilled-water and ice plant; Parang from the Alfonso XIII spring. The Agricultural colonies use well water, the wells of which are often overflowed. Cholera cases occurring during the year showed

evident infection from river water. Several artesian wells were drilled without satisfactory results.

Infant welfare work is still in its infancy. District visiting nurses and midwives are, however, making a good, effective beginning. It is calculated that about 50 per cent of all deaths occurred among Christian infants under 2 years of age. It would probably be more appalling when the non-Christian deaths are recorded. It is hoped that the appointment of more district visiting nurses and midwives to coöperate with women's clubs will decrease this mortality rate.

DAVAO.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Cases.
4. Malaria	900
171. Traumatism by cutting or piercing instruments.....	297
145. Other diseases of the skin and annexa.....	234
187. Ill-defined organic diseases.....	140
144. Acute abscess.....	126
10. Influenza	120
89. Acute bronchitis.....	103
103. Other diseases of the stomach (cancer excepted).....	97
73. Neuralgia and neuritis.....	75

Municipal sanitation.—The municipality of Davao uses the pail system of waste disposal. The excreta is deposited in a large pit of the Antipolo system plan. The establishment of the Antipolo system is being taken up in Davao, Mati, Manay, Caraga, Baganga, Cateel, Santa Cruz, and in the municipal districts.

The municipality of Davao has one permanent market and one slaughterhouse. There were neither markets nor slaughterhouses in the municipal districts.

In the town of Davao rain water stored in tanks is used for drinking purposes, while in the barrios, spring and stream water is used. In the other municipalities well or river water is used. There is a plan for the establishment of a water supply system.

At Davao garbage is collected regularly and disposed of or buried in a big pit. In other towns there is no regular collection of garbage but the people were obliged to collect and burn their own garbage on their premises.

There was one district nurse at Davao and one midwife at Mati engaged in infant welfare work.

Inspection of schools was performed regularly by health officers or graduate nurses.

The Health Service coöperated in the food and clean-up week campaigns.

During the year 120 sanitary orders were issued; 10 prosecutions filed; and 3 new municipal ordinances passed.

Since 1917 general vaccination work was carried on throughout the province. The failure of 3 succeeding vaccinations among the non-Christians detracted faith from this efficient prevention and it also disposed them to hate the health personnel.

Recommendation.—(1) Establishment of dispensaries in the distant municipal districts as the expenses incurred in inspection trips are occasionally greater than that of the salary of the personnel for such dispensaries, and (2) drilling of artesian wells in the various municipal districts.

LANAO.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Cases.
4. Malaria	1,670
145. Other diseases of the skin and annexe.....	1,388
5. Smallpox	1,310
103. Other diseases of the stomach, (cancer excepted).....	333
143. Furuncle	240
171. Traumatism by cutting or piercing instruments.....	230
90. Chronic bronchitis.....	215
20. Purulent infection and septicaemia.....	201
107. Intestinal parasites.....	198

Amoebic dysentery is endemic in Lanao. It is difficult to convince the Maranaos that protection against intestinal diseases may be secured by drinking boiled water.

Malaria is prevalent all over the province, but less severe in the town centers. Quinine is distributed liberally as a prophylactic. Roman and Tamparan were badly infected on account of stagnant water being always present in these towns. Enlarging the mouth of the Agus river so as to lower the water level of lake Lanao by at least one meter will drain these two places.

Tuberculosis is very rare in Lanao.

Disposal of excreta.—The pail system is used in Dansalan, Iligan, and Malabang. The Antipolo system cannot be readily adopted on account of lack of funds and high cost of materials.

Cemeteries.—There are two municipal, one Roman Catholic and one Chinese cemeteries in Iligan, Momungan and Malabang, respectively. They are fenced with wire to prevent the entrance of animals. Dansalan has a provisional cemetery. There are

proposed cemeteries at Dansalan, Buruun and Dalipusa, one for each.

Water supply.—There is one artesian well at Iligan. Dansalan derives its water supply from lake Lanao. More artesian wells should be drilled.

Markets and slaughterhouses.—Malabang has one market of mixed construction, having a cement floor and light material superstructure. The provisional markets at Iligan and Dansalan are kept clean.

There are no slaughterhouses in this province.

Medical inspection of schools.—During the year only 6 schools were inspected due to the smallpox and cholera epidemics engaging the time and attention of the health officers. A launch should be provided at lake Lanao for (1) school inspections and (2) for attending emergency cases in towns bordering on the lake.

Infant welfare.—Infant mortality was not high on account of the infrequency of beriberi. Gastro-intestinal diseases were more prevalent. There is no woman's club in the province.

The influenza epidemic was not as severe as in other provinces due to the high altitude, constant temperature and the sparse and widely scattered population of the province of Lanao.

Vaccination.—Two remittances of vaccine virus were useless in the vaccination campaign as the virus was inactive. Good virus was received in the third remittance. This time the province was divided into six districts, and each district placed in charge of a vaccinating party, composed of a senior sanitary inspector, 3 or 4 vaccinators, and a Constabulary officer and 15 soldiers. The units were instructed to coöperate with the datu in convincing the Maranaos and apprehending those who refused to be vaccinated in order to try them for violation of the laws governing vaccination. The results were very satisfactory. Very little opposition was encountered and not a single case was tried in court.

The good virus was kept as follows: (1) Constantly in ice-box filled with ice (2) each party was given virus enough to last 3 days (3) each party was provided with a thermostat bottle half filled with cracked ice covered with cotton (4) regularly every 3 days they received their supply of virus and ice.

Sanitation among non-Christians.—The water used by the non-Christians is mostly derived from springs, wells, rivers, and lake Lanao. The Maranaos defecate in the rivers and lake Lanao. This custom gravely endangers public health.

The Maranao markets are simple cogon roofed sheds where they gather on certain market days for trade. Sanitarily they are very unsatisfactory.

The Maranaos used to bury the dead inside their cotta and near their homes. Now the majority of the barrios and rancherias have their own unfenced burial ground, generally about 1,000 yards from the nearest dwelling house. There are plans for requiring these barrios and rancherias to establish next year cemeteries approved by the Director of Health.

Recommendation.—What will render the best service in the interest of public health is the establishment of good water supply together with the eradication of the Maranao habit of defecating in rivers and streams.

MISAMIS.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Cases.
4. Malaria	730
145. Other diseases of the skin and annexa.....	622
10. Influenza	470
75. Diseases of the eyes and their annexa.....	343
174. Traumatism by cutting or piercing instruments.....	267
144. Acute abscess.....	242
27. Beriberi	143
76. Diseases of the ears.....	72
90. Chronic bronchitis.....	57
107. Intestinal parasites.....	152

There are 15 municipalities divided into five sanitary divisions of three municipalities each. There is a physician in charge of each division. In Cagayan there is a provincial hospital in charge of the District Health Officer and the president of the sanitary division.

Beriberi is very prevalent among adults and infants in the island of Camiguin. This is due to the fact that imported polished rice forms a large part of the people's diet as the island of Camiguin produces a very small amount of rice and corn for local consumption.

Malaria.—This disease is endemic in most of the towns of this province, and shows a preference to attack persons living in the woods in virgin territory. Liberal distribution of quinine will decrease malaria in the province.

Tuberculosis is very prevalent in this province.

Municipal sanitation.—The Antipolo system has been adopted in all the municipalities, except in Initao, Cagayan Tagoloan and Mambajao where the pail system is used.

During the year three cemeteries were opened, four old ones reopened and two closed.

There are six permanent, nine temporary and two mixed material markets. Cagayan and Mambajao each have a slaughterhouse. Spring water brought in galvanized iron tubes is used in the island of Camiguin. River, spring, well or rain water is used in other towns. Cagayan has an artesian well 4,149 pupils were inspected. The majority of the pupils have skin diseases, trachoma and dental caries.

SULU.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Cases.
4. Malaria	6,460
145. Other diseases of the skin and annexa.....	5,585
107. Intestinal parasites.....	3,257
171. Traumatism by cutting or piercing instruments.....	1,386
89. Acute bronchitis.....	1,219
103. Other diseases of the stomach (cancer excepted).....	1,110
10. Influenza	1,209
75. Diseases of the eyes and their annexa.....	667
118. Other diseases of the digestive system (cancer and tuberculosis excepted)	541
99. Diseases of the mouth and annexa.....	427

Sulu Public Hospital.—Improvements were made in the operating room of the hospital. Shower baths and laboratories were installed.

Vital Statistics.—The death rate during the year shows a slight decrease in spite of the influenza epidemic. The infant mortality rate has fallen decidedly while the birth rate shows a slight decrease. Marriages and births were not registered properly. Infantile beriberi was not very common among Moros due to the fact that even at a very tender age the infant is allowed such foods as banana, coconut oil, rice broth, etc. On the other hand morbidity from gastro-intestinal diseases was very high.

Dangerous communicable diseases:

	Smallpox.	Cases.	Deaths.
Sibaud		5	0
Cagayan		2	0
Sibalung		2	1

One person responsible for the spreading of smallpox in Sibaud and Sabalung by using human secretion for vaccination was fined ₱20.

The cases of typhoid fever were mostly among Japanese. These people eat raw oysters which are known to harbor the bacilli.

There is urgent need for the establishment of potable water supply to decrease the prevalence of dysentery.

Influenza.—In Jolo alone 1,581 cases with 11 deaths were registered.

Cholera.—There is a general prevalence of this disease throughout the province and outside of Jolo. Besides huge sanitary improvement of the malarial regions, the wholesale distribution of quinine among the masses will tend to reduce malaria.

Municipal sanitation. Disposal of excreta.—In Jolo there are 118 flush closets, one septic tank, 95 pails, and 314 other toilets. The pail system is the one approved by the municipality of Jolo. The provincial board disapproved the Antipolo system on account of its being in conflict with local customs and religion. In nearly all parts of the province excreta is disposed of directly into the sea.

Cemeteries.—Jolo has five cemeteries (Roman Catholic, Japanese, Chinese, Mohammedan, and municipal) and Siasi has one Roman Catholic and one Chinese cemetery.

Markets.—There are two cement markets in Jolo, with two tanks for washing. They are kept in good sanitary condition. Parang has one cement market. In nearly all districts and barrios there are provisional markets where the people trade on certain market days. There are about fifty such provisional markets.

There is one slaughterhouse in Jolo.

Water supply.—Jolo is supplied with potable water from springs at Asturias and brought to Jolo by cement tubing and distributed to the homes. There are 3 pump wells. Besides, distilled water is available in Jolo. Siasi also is supplied with spring water piped to the town. In other towns well water is used. The province is well supplied with springs and they should be availed of by proper piping to the towns.

School inspection.—Every school child in Jolo, Siasi and Lapak has been inspected and sick school children were treated.

Infant welfare.—Ninety-nine infants under 2 years of age have been admitted in the Sulu Public Hospital. The Jolo Woman's Club devotes its activities to infant welfare work as well as to the home garden campaign. Publicity work in behalf of public health, food campaign, and clean-up week were some of the other side activities of the Health Service at Sulu.

Vaccination.—Thirty-nine persons were inoculated with Shanghai Vaccine, with 29 positives or 74 per cent; 25 persons were inoculated with Saigon vaccine, with 12 positives or 48

per cent. The value of vaccine is being gradually appreciated by the Moros. The coöperation of "datus" and "panglimas" and the employment of Moros as vaccinators together with persuasion aided in extending the vaccinated campaign.

SURIGAO.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

4. Malaria	144
10. Influenza	80
107. Intestinal parasites.....	71
14. Dysentery	50
145. Other diseases of the skin and annexa.....	26
54. Anaemia chlorosis.....	22

There are over 5,000 non-Christians inhabitants in the Province of Surigao belonging to the Manobos and Maranaos. They live in the municipalities of Surigao, Placer, Cantilan, Tandag, Lianga and Hinatuan separate from the Christian population. With the exception of teachers acting as sanitary inspectors, in the non-Christian barrios, no other sanitary steps have been taken among the non-Christians. It is recommended that 3 sanitary inspectors be especially detailed to work among them and that 3 non-Christian pupils be sent as pensionados to study sanitation.

Among the Christian population, there is a group called the "Colorums" living in the mountains and given to fanatic beliefs and practices.

Hospitals and dispensaries.—There is no Government hospital in the province. There is a dispensary in each municipality in charge of a physician or a sanitary inspector.

Dangerous communicable diseases.—Malaria is prevalent among people living outside of the towns, in the forests or on the low lands. The attention of these people has been called to these insanitary environments as a cause of the prevalence of malaria. In spite of this, very little coöperation or sanitary improvements were observed.

From the reports it is seen that four tenths of the deaths were due to dangerous communicable diseases (cholera, small-pox, dysentery, grippe, etc.). It is recommended that any town in which a case of dangerous communicable disease occurs be declared as a cantonment zone to be under a military sanitary rule enforced by a health officer as commander-in-chief.

Disposal of excreta.—Of the 9 municipalities, Gigaquit is the only one not adopting the Antipolo system. It is alleged that the toilet tanks may contaminate the nearby wells. In Hinatuan and Lianga palma brava is used for piping.

At Dapa two cemeteries have been ordered closed.

Water supply.—At Placer a water supply system is under construction for which ₱12,400 were appropriated. In Bacuang ₱7,500 have been appropriated for its water supply. In Lianga ₱1,900 have been spent on its water supply. A water system for Surigao is now under study in the district engineer's office.

In Surigao 4 perforations for artesian wells gave salty water. It is recommended that at least pumps be provided for those towns obtaining their water supply from wells.

Markets and slaughterhouses.—There are four permanent and five provisional markets in the province.

Infant welfare.—There is one woman's club at Surigao with 60 members. About one third of the total deaths occurred in infants under two years of age. Instruction to mothers and free medical treatment of sick children were given.

Vaccination.—Vaccination would have been more extensive if the cholera epidemic had not absorbed so much of the time and attention of the health personnel.

Miscellaneous.—The health personnel coöperated in the Liberty loans and Red Cross drives, and the agricultural contest held by the Bureau of Agriculture.

Recommendation.—That the sum of ₱100,000 be appropriated for sanitary improvements in the province.

ZAMBOANGA.

The Province of Zamboanga has an area of 7,276 square miles and a population of 145,000 inhabitants, of whom 75,000 are Christians living in towns and 70,000 are non-Christians living in barrios and rancherias.

COMMON DISEASES (AS RECORDED IN THE DISPENSARIES).

	Case.
4. Malaria	1,172
145. Other diseases of the skin and annexa.....	1,127
10. Influenza	851
107. Intestinal parasites.....	501
171. Traumatism by cutting or piercing instruments.....	376
103. Other diseases of the stomach (cancer excepted).....	282
186. Other external violence.....	229
75. Diseases of the eyes and their annexa.....	201
143. Furuncle	188
69. Acute bronchitis.....	163

Malaria may be found in all parts of the province, especially in barrios inhabited by Moros. An anti-malarial campaign was

carried out in the city of Zamboanga. Quinine was distributed freely among the people.

Tuberculosis also is important in view of its prevalence. Similar measures as in other provinces are advised.

Municipal sanitation. Zamboanga.—The pail system is used. The collection was done by private individuals on contract basis. The excreta is thrown into the sea far from the shore.

Zamboanga itself has a Roman Catholic and a Protestant cemetery. Tetuan, Ayala, and Manicaban have each a Roman Catholic cemetery. One municipal cemetery is under construction for Zamboanga. Dapitan, Dipolog and Lubungan each have a Roman Catholic cemetery. They are all kept in good sanitary condition. The Moro rancherias also have some form of burial place.

Markets and slaughterhouses.—Zamboanga has a market of strong material and cement floor. The foods offered for sale are placed on tables. There is always a sanitary inspector detailed there to inspect the food for sale. The slaughterhouse is located outside of the town of Zamboanga near the sea. Dipolog and Lubungan each have a public market.

Water supply.—Zamboanga derives its water supply from the reservoir at Pasonanca, about four and one half miles from town. The water is piped to the town in iron tubes. The water is under constant examination and inspection. It is pure and potable water. Isabela de Basilan has a good water supply. It comes from the mountains from where it is led into the town by pipes. Here it is kept in a reservoir from which the people may get water through a faucet. For Dapitan, Dipolog and Lubungan the drilling of artesian wells is recommended.

Medical inspection of school children.—In Zamboanga, Dapitan, Dipolog and Lubungan school children are examined.

Miscellaneous.—The health personnel has participated more or less actively in the food campaign, clean-up week, Red Cross and Liberty loan drives.

The following activities are recommended for 1919:

(1) Increase the health personnel. (2) establish more dispensaries on the rancherias and in the Moro barrios, they being one of the most potent factors in attracting these people to civilization. (3) establishment of a sewage water disposal system in Zamboanga. (4) drilling of artesian wells in Dapitan, Dipolog and Lubungan. (5) building of a morgue in Zamboanga.

San Ramon Penal Farm.—The medical officer arrived at the farm in July, 1918. Immediately anti-mosquito and anti-fly campaigns were started in July and August and lasted till Nov-

ember.) Another campaign against bed bugs was carried on among the prisoners in October. As a result of the campaigns, flies, mosquitoes and bed bugs were very rare by November.

In the prison itself water from a well-cared-for pump-well is used. Prisoners working in the field and those living outside of the reservation use river or well water.

Inside the reservation waste is disposed of by a water sewage system. Outside the prison the pail system is used. The Antipolo system is used in buildings far out in the fields.

One cholera suspect was detected. An examination of 150 persons for cholera carriers gave an average of four per cent positives.

General vaccination was carried out. The Saigon virus gave sixty-five per cent positive; the Shanghai, fifty-four per cent positives.

There were admitted in the sick ward during the year 1052 persons, with 3.61 per cent mortality. In the dispensary 1,555 cases were recorded, with 31,117 treatments. The hospital expenses for subsistence and fuel amounted to ₱1,255.36. The expenses for medical and surgical supplies amounted to ₱2,270.93. The hospital had an average of 20 patients at all times.

XVIII.

CONCLUSION.

Like all missionary work, the extension of the benefit of health and sanitation in Mindanao and Sulu has demanded even the supreme sacrifice of life. Sanitary Inspector Hospicio Agasa was killed in Lanao during the vaccination campaign. Sanitary Inspector Juan Dagnaos was killed in Sulu while inspecting a market. They are both highly deserving of praise and the Government should take measures to help the dependents of the deceased. The fate of these two workers indicates the actual accidents only. In many instances physicians and sanitary inspectors risked their lives in the performance of their duties. This spirit of sacrifice indicates the high state of discipline and morals of the sanitary personnel of this division.

REPORT OF THE OFFICE OF HYGIENIC AND INDUSTRIAL DEVELOPMENT

[MAMERTO TIANCO, *Acting Chief of Office.*]

ACTIVITIES.

During the period for which this report is made the activities of this office were conducted along the same lines as in the preceding year, and the work undertaken has been a continuation of the program instituted for the attainment of its mission as outlined in the report for 1916.

CAMPAIGN FOR SANITARY DWELLINGS, PROPER HANDLING OF FOOD-STUFFS AND DRINKING WATER, AND PROPER DISPOSAL OF WASTES AT THE CARNIVAL OF 1918.

The exhibits of the Philippine Health Service at the Carnival held during February, this year, were along the same lines as those of last year, with improvements and additions.

This year, in addition to and in connection with the Sanitary Model House, household vegetable and flower gardens have been planted. The house was much larger than that of last year, was of better construction, painted and the shingles for roofing have been improved by widening and adding to their lower end a small diamond shaped protuberance which serves as a lock in the laying of the shingles so that leaks cannot occur. The shingles are larger, and overlap more in laying, all of which contribute to make the roof water tight. The house was much better furnished and appealed to a larger class of people. It had all the facilities which a sanitary house should have, receiving room, sala and sleeping room combined, bed-room proper, toilet, bathroom and a well arranged kitchen; the water, food, etc., handled in a sanitary manner, i. e., water protected from soiled hands, food from flies and dust, and sleeping occupants from mosquitoes, etc.

Sanitarily speaking, the house was comparable with any of the best managed houses in the Philippine Islands. The toilet was of the Antipolo system, the pipes were of vitrified clay made and burned at the kilns of Mr. Santiago Jimenez, San Pedro Macati, Rizal. The waste water from the bath and kitchen were

sanitarily disposed of to the toilet pit so that the grounds were always kept dry and clean. The uncleanly and unsightly "pusalian" generally seen under the provincial houses has been done away with.

In the house a "balanced diet" was exhibited and a nurse answered all inquiries as to the method of its cooking, its constituents and values, and practical demonstrations were given at convenient times. The idea was to induce the people to adopt a type of diet which will give all the essential substances necessary for a well nourished body. It was also aimed in this part of the exhibit to create in the minds of the people the necessity of helping to conserve the food supply by a wise economy in food consumption.

The home gardens which were made a part of the exhibit was a practical demonstration of how such things can be conducted in almost every home of the Archipelago. The vegetable garden contained, cabbage, patchay, beans, mongo, peas, beets, endive, okra, pepper, egg-plant, sweet potatoes, etc. Such a garden will not only reduce expenses as to food but will produce some revenue to the house-owner as well. The fence was also made sanitarily, the bamboo knots are barred so that they will not hold water, thereby eliminating mosquito breeding places.

CHILD WELFARE WORK.

The organization of women's clubs for child welfare work has been given great impetus during the year, and we have now a chain of 233 such clubs from Batanes and Aparri to Jolo, Davao and Cotabato, of which 157 were established during the year. Nineteen puericultural centers were also organized and thirty-eight baby contests held during 1918. All in all, great progress was effected in child conservation work.

Women's clubs were established in the following towns during the year 1918;

Albay:

Viga, Virac.

Ambos Camarines:

Buhi, Bula, Cabusa, Calabanga, Camaligan, Gainza, Goa, Indan, Labo, Lagonoy, Libmanan, Mambulao, Milaor, Minalabac, Naga, Pasacao, Pili, Sagnay, San José, San Vicente, Sipocot, Sirimu, Talisay, Tigaon, Tinambac.

Benguet:

Baguio.

Batanes:

Itbayat, Mahatao.

Batangas:

Lipa, Tanauan, Nasugbu.

Bohol:

Loon, Bilar, Jagna, Maribojoc.

Bulacan:

Bocaue, Bustos, Hagonoy, Guiguinto, Pandi, Pulilan, San Miguel, Marilao, Meycauayan, Norzagaray, Paombong, Polo, Quingua, San Rafael.

Cagayan:

Alcala, Aparri, Ballesteros, Iguig, Lallo, Solana, Tuao, Tuguegarao.

Cebu:

Argao, Balamban, Barili, Bago, Carcar, Tuburan, Bantayan, Cebu, Dalaguete, Dumanjug, Malabuyok, Sibonga.

Cotabato:

Cotabato.

Davao:

Davao.

Ilocos Norte:

Solsona, Bacarra, Badoc, Bangui, Batac, Burgos, Dingras, Laoag, Paoay, Pasuquin, Piddig, San Nicolas, Sarrat, Vintar.

Ilocos Sur:

Santa Lucia, Cabugao, Vigan.

Iloilo:

Leon, Arevalo, Miagao, Oton, San Joaquin, Tigbauan.

Isabela:

Cabagan.

La Union:

Agoo, Caba and Luna.

Leyte:

Tacloban, Palompon.

Misamis:

Isabela, Mambajao.

Nueva Ecija:

Aliaga, Gapang, Jaen, San Isidro, Pantabaygan, Catabangan, Bagabag, Lupao.

Nueva Vizcaya:

Bayombong, Dupax, Dupax (Aritao), Bagabag and Antao.

Occidental Negros:

Bacolod, Bago, Binalbagan, Himamaylan, Ilog, Hiniguan, Isabela, Cabancalan, La Carlota, Pontevedra, Valladolid, Cadiz, Palupandan, Saravia.

Oriental Negros:

Dumaguete.

Pangasinan:

Binmaley, San Carlos, Malasiqui, Labrador, Tayug.

Palawan:

Puerto Princesa.

Pampanga:

Bacoor, Macabebe, Candaba.

Romblon:

Corcuera, Bantasua, Banton, San Fernando.

Samar:

Buiuan, Calbayog.

Sorsogon:

Gulas, Gubat.

Tayabas:

Sariaya, Infanta.

Zamboanga:

Zamboanga.

Zambales:

Masinlac, Iba.

The organization of women's clubs throughout the provinces during the year 1918 compares very favorably with previous years, showing an increase of 132 per cent over 1916 and 155 per cent over 1917.

The following associations for the protection of early infancy were incorporated during the year 1918:

Bulacan:

Malolos, Centro de Puericultura.

Cebu:

Catmon, Centro de Puericultura.

Laguna:

Majayjay, Centro de Puericultura.

San Pablo, Centro de Puericultura.

Santa Cruz, Centro de Puericultura.

Leyte:

Palompon, Asociación de la Protección de la Infancia de Palompon.

Misamis:

Mambajao, Centro de Puericultura.

Negros Occidental:

Silay, Circulo Femenil.

San Carlos, Centro de Puericultura.

Binalbagan, La Salvación de la Infancia.

Pampanga:

San Fernando, Club de Dama Fernandina para la Protección de la Infancia.

Pangasinan:

Asingan, Centro de Puericultura.

Lingayen, Centro de Puericultura.

Samar:

Guiwan, Centro de Puericultura.

Tayabas:

Infanta, Centro de Puericultura.

Boac (Marinduque), Centro de Puericultura.

Santa Cruz (Tayabas), Centro de Puericultura.

Mogpoc and Mandijay, Centro de Puericultura.

Zamboanga:

Zamboanga, Centro de Puericultura de Zamboanga.

The number of associations for the protection of early infancy incorporated during the year 1918 shows a decrease of 24 per cent as compared with 1917.

CAMPAIGN FOR IMPROVING DIET.

The diet of the average Filipino has been found deficient, and as a consequence thereof, the majority of the people are

under-nourished. The quantity of food may be sufficient but the quality and variety may be insufficient for the needs of the body. Work toward the improvement of the dietary of the Filipino people has been endorsed to the existing women's clubs. Practical demonstrations on the subject were given at the Carnival and a bulletin dealing with a balanced diet for thirty days was issued, under the direction of the Director of Health, during the year.

CAMPAIGN FOR BETTER FECAL DISPOSAL.

With regard to the campaign for better fecal disposal in the provinces, it is noteworthy that the office has succeeded in having 3,900 unglazed, vitrified clay pipes for closets of the Antipolo system, made locally at a cost of fifty centavos each, which if imported would have cost ₱4.50 a piece. The local product means a reduction of 400 per cent from the cost of the foreign-made pipes, and such an achievement spells great possibilities for wider use of the Antipolo plan of sewage disposal as well as for local production of materials for general plumbing work.

As a net result of this campaign in the provinces for better fecal disposal, a total of 38,454 new closets of the Antipolo system were installed during the year—these with the number in operation at the close of the year 1917—32,274—make a grand total of 70,728 Antipolo closets in operation at the end of 1918.

HOME GARDENS.

The campaign for the establishment of home gardens has been continued and in connection with the campaign for food production undertaken by all concerned, especially by the Bureau of Agriculture, Bureau of Education, and local authorities have resulted in the following:

Total promises to plant home gardens.....	295,802
Number of persons to whom seeds were distributed.....	93,518
Number of home gardens actually planted.....	330,462

REPORT OF THE OFFICE OF SANITARY ENGINEERING

[EDWARD L. BARBER, *Sanitary, Engineer.*]

The work of this office may be divided into the following sections:

1. Sanitary supervision of building construction, city of Manila.
2. Execution and enforcement of structural sanitary orders, including all orders for filling in low lands, city of Manila.
3. Plumbing installation and inspection, city of Manila.
4. Sanitary and construction projects, provincial.
5. Drafting department.
6. Construction work, city of Manila.
7. Construction work, Culion Leper Colony.

MANILA.

There is appended hereto a tabulation showing the amount of routine work performed in the city of Manila and the provinces. During the year 546 sanitary orders were issued, subdivided under the following heads: Minor orders, sewer orders, vacating orders, and filling orders; a total of 525 orders were completed; 77 separate projects were handled in the drafting section and 933 blue-prints were made from various tracings; building projects to the number of 2,972 were acted upon; and 728 separate plumbing projects were handled in this office, the total cost of the latter amounted to ₱205,301.95.

PROVINCIAL.

The following provincial trips were made:

1. Sariaya, Tayabas, to inspect the proposed sewer system.
2. Culion, Palawan; two trips were made, the first for laying out a program of construction work for the year 1918 and the second for a conference with the chief of the colony regarding construction appropriations.
3. San Pablo, Laguna, to inspect reconstruction of the carnival model house.

Statistical information by districts.

[Manila only.]

	Health districts—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Orders pending December 31, 1917	33	108	61	73	11	286
Orders issued:						
Minor orders	47	224	36	15	25	347
Sewer orders	14	52	7	2		75
Vacating orders		38	5	1	31	75
Filling orders	1	1	46		1	49
Total	62	315	94	18	57	346
Grand total	95	423	155	91	68	832
Orders completed:						
Minor orders	43	225	32	15	20	335
Sewer orders	5	47	8	3		63
Vacating orders		56	3	4	7	70
Filling orders	1	1	40	14	1	57
Total	49	329	83	36	28	525
Orders cancelled:						
Minor orders				1		1
Sewer orders	1	2				3
Vacating orders		1				1
Filling orders						
Total	1	3		1		5
Grand total	50	332	83	37	28	530
Orders pending December 31, 1918:						
Minor orders	13	15	8	1	10	47
Sewer orders	25	72	9	3	1	110
Vacating orders	1	4	2	19	24	50
Filling orders	6		53	31	5	95
Total	45	91	72	54	40	302

Statistical information by quarters.

[Manila only.]

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Orders pending December 31, 1917					286
Orders issued:					
Minor orders	111	143	43	50	347
Sewer orders	23	14	21	17	75
Vacating orders	2	21	24	28	75
Filling orders	1	44	4		49
Total	137	222	92	95	546
Grand total					832
Orders completed:					
Minor orders	90	126	62	57	335
Sewer orders	17	21	8	17	63
Vacating orders	9	21	11	29	70
Filling orders	15	13	21	8	57
Total	131	181	102	111	525
Orders cancelled:					
Minor orders		1			1
Sewer orders		1	1	1	3
Vacating orders				1	1
Filling orders					
Total		2	1	2	5
Grand total	131	183	103	113	530
Orders pending December 31, 1918					
Minor orders					47
Sewer orders					110
Vacating orders					50
Filling orders					95
Total					302

Statistical information by districts.

[Manila only.]

	Health districts—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Strong material plans approved:						
New buildings including additions and alterations	91	235	124	78	91	691
Permits for minor building construction:						
Approved	53	145	39	18	31	291
Disapproved	18	35	7	12	5	77
New buildings completed	14	40	14	12	11	91
Light and mixed material structures:						
Permits approved			284	724	240	1,248
Permits disapproved			141	391	114	646
Total number of building projects passed upon	181	455	609	1,235	492	3,044

NOTE.—Thirty-two cases of illegal construction were reported to the city engineer, five of which were reported according to ordinances.

Statistical information by quarters.

[Manila only.]

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Strong material plans approved:					
New buildings, including addition and alteration	133	148	168	170	619
Permits for minor building construction:					
Approved	71	67	72	81	291
Disapproved	24	14	30	9	77
New buildings completed	20	19	18	34	91
Light and mixed material structures:					
Permits approved	221	544	275	208	1,248
Permits disapproved	134	159	204	149	646
Total number of building projects passed upon	603	951	767	651	2,972

Statistical information by districts.

[Manila only.]

	Health districts—					Total.
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	
Plumbing permits issued	148	396	127	89	68	828
Plumbing projects completed	135	339	112	81	61	728
Premises connected to the sanitary sewer to January 1, 1918	1,314	2,251	791	329	296	4,981
Premises connected during 1918	30	95	26	11	10	172
Total December 31, 1918	1,344	2,346	817	340	306	5,153

Statistical information by quarters.

[Manila only.]

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Plumbing permits issued	183	246	187	212	828
Plumbing projects completed	184	196	153	195	728
Premises connected to the sanitary sewer to January 1, 1918					4981
Premises connected during 1918	43	42	36	51	172
Total December 31, 1918					5,153

Statistical information by districts.

[Manila only.]

Health district.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
Intramuros	3	1	P45.00
Meisic	2	1	35.00
Sampaloc		1	
Tondo			
Paco			
Total	5	3	80.00

Statistical information by quarters.

[Manila only.]

Quarter.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
First.....	1	-----	P25.00
Second.....	-----	3	-----
Third.....	-----	-----	-----
Fourth.....	4	-----	55.00
Total.....	5	3	80.00

DRAFTING PROJECTS.

Project No.

- 1,23. Portfolio map (Manila), 65 per cent completed.
 6. Blue printing, at intervals.
 43. Work report, completed at the end of every month.
324. Maximum and minimum temperature taken daily from January, 1911, continuous.
385. Correcting Health Bulletin No. 16, 95 per cent completed.
408. Plan of map file for the office of Sanitary Engineering, 100 per cent completed.
419. Sketch for the Quarantine Station and organization, 100 per cent completed.
420. Estimating materials of roof of Christian chapel for Culion Leper Colony, 100 per cent completed.
421. Remeasuring municipal golf course, 100 per cent completed.
422. Reducing plan and sectional views of a squatting closet, 10 per cent completed.
423. Signs for 1918 Carnival, 100 per cent completed.
424. Re-tracing plan of Imhoff tank for the standard provincial toilet, 100 per cent completed.
425. Diagram showing provincial cholera cases, July to December, 1917, intervals.
426. Diagram of six different diseases—tuberculosis, diphtheria, dysentery, typhoid and paratyphoid, and malaria, 100 per cent completed.
427. Computations for new general Culion survey, 90 per cent completed.
428. New general topographical map of Culion, scale—1:2000, 30 per cent completed.
429. Social building for women's club, Cabanatuan, Nueva Ecija, 100 per cent completed.
430. Description and sketch of improved concrete shingle, 100 per cent completed.
431. Continuation of diagram showing cases and deaths of different contagious diseases (intervals).
432. Tenement house for Culion Leper Colony, 100 per cent completed.
433. Sketch of simple scarifier for vaccination, 100 per cent completed.
434. Latest map of health districts and subdistricts (Manila), 100 per cent completed.
435. Plan of sterilizer and pasteurizer for small dairies, 100 per cent completed.
436. Reëstimating bill of materials for Christian chapel, Culion Leper Colony, 100 per cent completed.

437. Clerks' quarters, Culion Leper Colony, 100 per cent completed.
438. Model plan of cemeteries, 100 per cent completed.
439. Enlarging section of flush valve, 100 per cent completed.
440. Christian chapel (new plan), Culion Leper Colony, 100 per cent completed.
441. Addition to model house plan for San Pablo, Laguna, 100 per cent completed.
442. Proposed reinforced concrete (second floor addition to General Hospital), Culion Leper Colony, 70 per cent completed.
443. Notification cards for contagious diseases, 100 per cent completed.
444. Diagram of smallpox epidemic, (Manila), 1918, intervals.
445. Modern standard plumbing fixtures (adapted from catalogue designs), 100 per cent completed.
446. Revising estimate of garbage crematory prepared by the Bureau of Public Works, 100 per cent completed.
447. Sketch showing directions for pasteurizing, 100 per cent completed.
448. Detail of manhole covers "20-24" diameter, 100 per cent completed.
449. Signs for San Lazaro Hospital, 100 per cent completed.
450. Alteration to Project No. 420, 100 per cent completed.
451. New proposed tile, 100 per cent completed.
452. Detail of steel cap for long chords support of roof of Christian chapel, Culion Leper Colony, 100 per cent completed.
453. Portable seat cover of sanitary fly proof pail, 100 per cent completed.
454. Preliminary data for the design of contagious disease hospital, 100 per cent completed.
455. General plumbing fixtures and recognized house drainage, intervals.
456. Proposed contagious disease hospital, 50 per cent completed.
457. Location of public midden sheds, at intervals.
458. Tape measurement at interior construction, No. 352 San Marcelino, 100 per cent completed.
459. Alterations to Philippine Health Service regulations governing the uniforms of officers and employees, 100 per cent completed.
460. Estimating bill of materials for social building Cabanatuan, Nueva Ecija, 100 per cent completed.
461. Diagram showing organization of Cantonment Camp, 100 per cent completed.
462. Typical arrangement of sewers for three regiment group of buildings, 100 per cent completed.
463. Sign for office of property, 100 per cent completed.
464. Proposed camp for National Guard Engineering Corps, 100 per cent completed.
465. Extra Cantonment Zone, Parañaque, Rizal, 100 per cent completed.
466. Map (Manila) showing permanent and temporary low lands, at intervals.
467. Banner for the 4th Liberty Loan parade, 100 per cent completed.
468. Computing areas of low lands (Manila), intervals.
469. Tracing map of proposed site for trains (Camp Claudio), 100 per cent completed.
470. Drawing for health bulletin No. 19, 100 per cent completed.
471. Reëstimating Bill of materials for new plan of Christian chapel, Culion Leper Colony, 100 per cent completed.
472. Alteration to project No. 407, 100 per cent completed.
473. Computing areas of health districts, 100 per cent completed.

474. Preliminary sketch of layout (Proposed sanitary barrio for mining camp, Cebu, Cebu), 100 per cent completed.
475. Leveling and measuring at Pandacan, Beata, for a sanitary barrio, 100 per cent completed.
476. Sign for the district health officer, Extra Cantonment Zone, 100 per cent completed.
477. Plan of settling tank for copra meal waste, 100 per cent completed.
478. Sketch of shelves for filing cases, 100 per cent completed.
479. Drawings for Philippine Health Service Almanac, 100 per cent completed.
480. Tracing of standard water closets, urinals, sinks, laundry tray and bath tubs, 100 per cent completed.
481. Sketch of additional construction to Mary Chiles Hospital, 100 per cent completed.
482. Tape measurement at 360-362 Calle Legarda, 100 per cent completed.
483. Reëstimating bill of materials, social building for Cabanatuan, Nueva Ecija, 100 per cent completed.
484. Tape measurements at 423-453 Calle Pinpin, 100 per cent completed.
485. Reducing diagram showing mortality of the city of Manila by months and from all causes, 1901 to 1914, 100 per cent completed.
486. Organization chart of personnel, Philippine Health Service, Extra Cantonment Zone, 100 per cent completed.
487. Chart showing decrease of smallpox death rate due to vaccination, 100 per cent completed.
488. Standard plans for strong material houses, 20 per cent completed.
489. Plan of smokeless Chinese stove, 50 per cent completed.

REPORT OF THE OFFICE OF DISTRICT NURSING

[MABEL F. DOBBS, *Acting Chief of Office.*]

There has been little change in the nature of the work from that of previous years. As we cannot begin to meet the actual great needs of the people, due to our limited staff, our work has been chiefly educational. Our plan is to visit each house in a district and treat the simple cases and refer the more serious ones to hospitals and clinics. Talks are given in each home on sanitation, housekeeping and balanced diets, expectant mothers are advised and instruction is given in the care of babies. Emphasis is given to the subject wherein education is apparently most needed in each household. The family is also instructed how to care for the sick in the homes and to use the necessary precautions in infectious diseases.

The people have appreciated our efforts and have taken interest in the instructions given them, which in many cases have been contrary to the customs of generations. So we feel that we are gaining, slowly but surely, the confidence of the people.

In the city of Manila our work has been in the districts of Tondo, Binondo, San Lazaro, and Intramuros.

During the months of June and July we assisted at San Lazaro Hospital in the smallpox epidemic and a part of our staff remained there during August and the first part of September.

Demonstration in balanced diets and the preparation of food were given at the model house at the carnival similar to those of the two previous years.

Similar demonstrations were given to the nurses of the hospitals at Baguio, Bontoc, Kiangnan, and Bayombong. Instructions were given to the people in the barrios along the trail between these towns.

Miss Bruchmiller, traveling nurse, had charge of the nursing in the infant mortality work of the sanitary survey in Cebu and Bulacan provinces.

Miss Clark, chief district nurse, made an inspection trip to the hospitals of Baguio and Bontoc during the months of September, October, November, and December.

Since October we have directed all of our efforts to the work in the extracantonment zone of Camp Claudio, working in the towns of Pasay, Parañaque, Las Piñas, and Bacoar. In Pasay, in addition to our regular work, we were able to examine the school children and to treat simple cases.

The female *tenderas* in the towns of Pasay, Parañaque, Imus, Pasig, San Juan del Monte, and San Felipe Neri were examined, given health certificates and instructed in methods of cleanliness.

Tabular report.

	First visits.	Subsequent visits.	Treatments.	Referred to clinics.	School children.		Tinderas examined and instructed.
					Examined.	Treatments.	
Manila	4,936	4,856	5,715	94			
Provinces	2,349	547	1,076		586	768	265
Total	7,285	5,403	6,791	94	586	768	265

REPORT OF CLERICAL OFFICE

[M. J. WALSH, *Chief Clerk.*]

The clerical office which comprises the office of the chief clerk, record section and financial section, commenced the new year with thirty-one employees; during the year seven of these transferred or resigned, eight new employees being appointed to fill their places.

The work of handling the correspondence of the Service during the year was increased considerably in volume over that of last year and occasioned considerable overtime by the employees to keep up to date.

A total of 151,000 pieces of mail matter were handled by the office during the year. Over 40,000 letters, reports, bulletins, etc., were received, 16,000 letters filed and 95,000 letters, reports, bulletins, etc., mailed.

During the year it was found that white ants had destroyed some of our wooden filing sections and a few of the papers filed therein, fortunately they were discovered in time to prevent the destruction of a large portion of our files.

We eventually got rid of the white ants by washing and disinfecting the filing cases and fumigating the papers, but some of the wooden cases were so eaten up that it became necessary to replace them. A set of new allsteel filing cases were bought and have been installed.

REPORT OF THE PROPERTY OFFICE

[B. D. BURHAM, *Chief of Office.*]

During the year four hundred and twenty-two general requisitions were received and filled, originating from the following stations:

Provincial requisitions.....	103
Health stations.....	118
Office of Sanitary Engineering.....	34
Culion Leper Colony.....	29
Department of district nursing.....	20
Central Office.....	16
Disinfecting squad.....	15
Baguio Hospital.....	15
San Lazaro Hospital.....	14
Sibul Springs Sanatorium.....	17
Bontoc Hospital.....	11
Cuyo Hospital.....	10
Bayombong Hospital.....	6
Kiangan Hospital.....	5
Extra Cantonment Zone.....	4
Philippine General Hospital.....	2
Bureau of Supply.....	1
Hospital Ship "Busuanga".....	1
Division of Sanitation, city of Manila.....	1
Total	422

Two hundred and twenty-two requisitions were prepared and forwarded to the Bureau of Supply for delivery to the following stations:

For delivery to office of property.....	121
For delivery to San Lazaro Hospital.....	46
For delivery to Health Station No. 2, Meisic.....	3
For shipment to Culion Leper Colony.....	27
For shipment to Baguio Hospital.....	12
For shipment to Cuyo Hospital.....	8
For shipment to Bontoc Hospital.....	6
For shipment to Provincial Sanitary Commission.....	2
Total	225

One hundred and nineteen requisitions were prepared and forwarded to the Bureau of Printing.

Orders for general supplies prepared under the direct order and payment system, 225.

Forty-two commissary requisitions were received filled, originating from the following stations:

San Lazaro Hospital.....	17
Culion Leper Colony.....	14
Baguio Hospital.....	9
Cuyo Hospital.....	2
Total	42

Commissary requisitions forwarded to the Bureau of Supply:

For Culion Leper Colony.....	33
For San Lazaro Hospital.....	20
For Baguio Hospital.....	7
For Cuyo Hospital.....	6
For Office of property.....	5
For Bontoc Hospital.....	2
Total	73

Orders for commissaries prepared under the direct order and payment system:

For Culion Leper Colony.....	225
For San Lazaro Hospital.....	225
For Baguio Hospital.....	75
For Cuyo Hospital.....	50
Total	575

Miscellaneous orders prepared, 128.

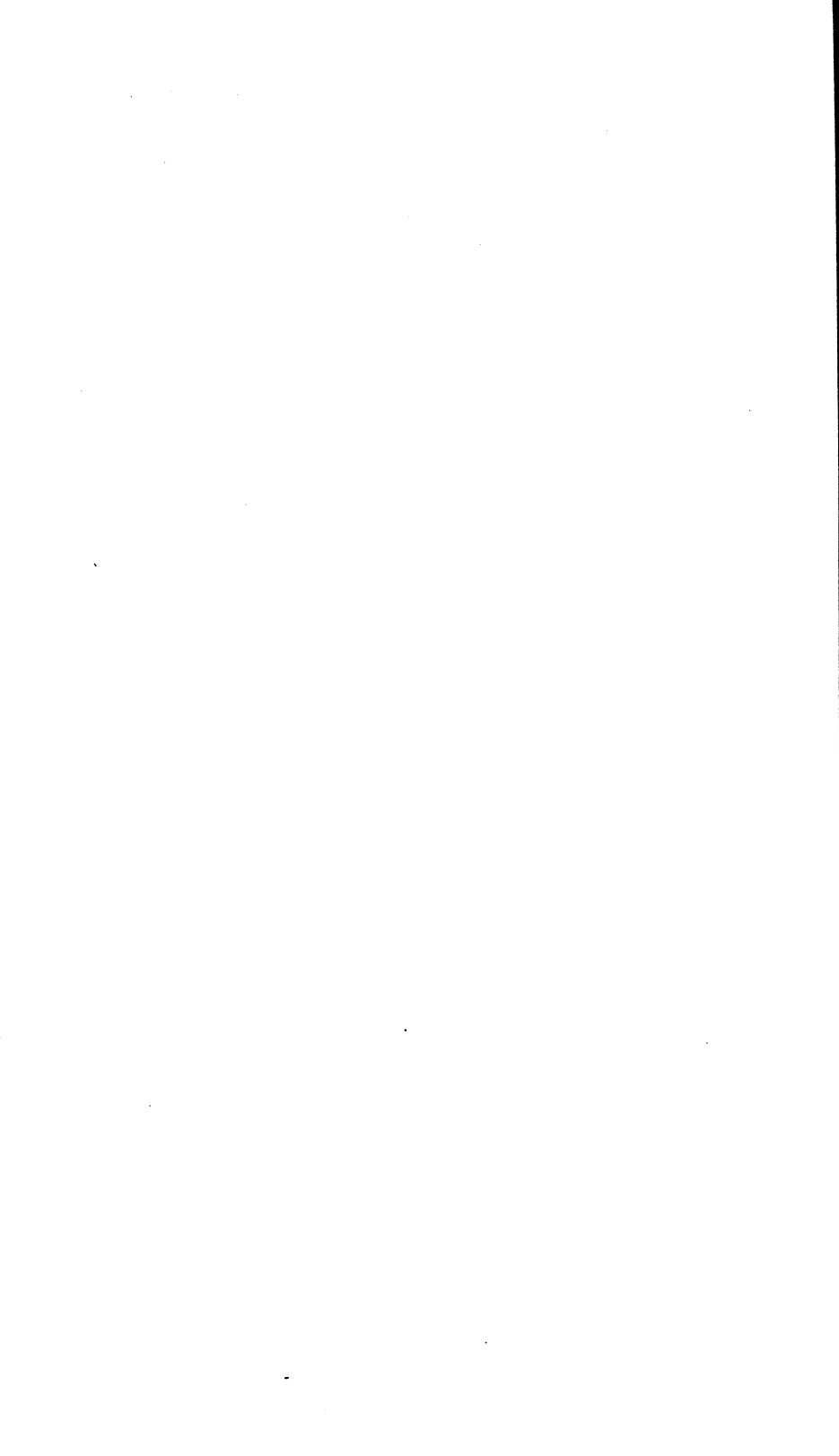
Orders prepared for Culion merchandise account, 247.

Vaccine report.

	Units.
On hand January 1, 1918.....	11,250
Received during the year.....	5,145,250
Total to be accounted for.....	5,156,500
Issued during the year.....	5,135,400
Remaining on hand December 31, 1918.....	21,100
Requisitions for vaccine virus received and filled.....	3,391
Shipments made by boat.....	289
Shipments made by railroad.....	157
Total	446

Inter-bureau vouchers and bills received and passed by the office of property:

	Number.	Amount.
Bureau of Supply	627	P294,305.33
Bureau of Prisons	19	2,376.89
Bureau of Printing	17	21,035.14
Bureau of Science	19	45,126.67
Bureau of Public Works	14	202.47
Bureau of Posts	6	2,800.00
Bureau of Forestry	1	2.00
Bureau of Coast and Geodetic Survey	3	38.40
Division of Cold Storage	12	3,875.76
Philippine School of Arts and Trades	7	304.50
Quarantine Service	1	840.70
Open Market	499	150,288.96
Total	1,225	521,196.82



STATISTICAL TABLES.

PHILIPPINE HEALTH SERVICE.

JANUARY 1 TO DECEMBER 31, 1918.

GENERAL STATISTICS

[Unless otherwise stated these statistics are for the fiscal year from January 1 to December 31, 1918.]

POPULATION OF THE CITY OF MANILA.

[Health Census of 1914.]

BY NATIONALITIES.

Nationality.	Population.		
	Male.	Female.	Total.
Americans	3,584	1,890	5,474
Filipinos	125,730	111,210	236,940
Spaniards	2,414	1,992	4,406
Other Europeans	1,027	479	1,506
Chinese	15,235	1,422	16,657
All Others	1,407	553	1,960
Total	149,397	117,546	266,943

BY DISTRICTS.

Health districts.	Population.		
	Male.	Female.	Total.
No. 1, Intramuros	18,467	13,586	32,053
No. 2, Meisic	57,121	32,943	90,064
No. 4, Sampaloc	22,856	21,367	44,223
No. 5, Tondo	36,520	35,279	71,799
No. 9, Paco	14,433	14,371	28,804
Total	149,397	117,546	266,943

MARRIAGES BY AGE. ¹

Males.		Females.						
Age.	Num-ber.	To 14 years.	To 20 years.	To 25 years.	To 30 years.	To 40 years.	To 50 years.	Over 50 years.
To 14 years		6	553	66	9	3		
To 20 years	637	3	783	266	71	18	1	
To 25 years	1,142	3	207	110	73	24	1	
To 30 years	418		87	65	58	59	6	1
To 40 years	276		14	20	20	34	8	1
To 50 years	97		1	3	7	25	7	2
Over 50 years	45							
Total	2,615	12	1,645	530	238	163	23	4

Nationality.	Male.	Annual birth rate per 1,000.	Female.	Annual birth rate per 1,000.	Total.	Annual birth rate per 1,000.
Americans	59	16.46	55	29.10	114	20.82
Filipinas	4,524	35.98	4,006	36.02	8,530	36.00
Spaniards	32	13.25	31	15.56	63	14.29
Other Europeans	29	28.23	28	58.45	57	37.84
Chinese	151	9.91	133	93.53	284	17.04
All others	22	15.63	13	23.50	35	17.85
Total and average	4,817	32.24	4,266	36.29	9,083	34.02

¹ Registration incomplete.

MARRIAGES.¹

Nationality.	Health districts—					Single males married.			Widowed males married.			Divorced males married.			Nationality of brides.					Relation-ship.
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Single female.	Widowed female.	Divorced female.	Single female.	Widowed female.	Divorced female.	Single female.	Widowed female.	Divorced female.	Americans.	Filipinos.	Spaniards.	Other Europeans.	Chinese.		All others.
Americans	51	29	6	6	26	86	21	2	5	96	151	3	1	39	70	1	7	3	1	1
Filipinos	173	1,175	292	655	146	2,051	143	---	---	---	---	---	---	---	2,437	---	---	---	---	---
Spaniards	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Other Europeans	3	6	1	7	3	8	4	---	1	---	---	---	---	3	9	---	1	---	---	---
Chinese	37	26	1	---	---	26	1	---	8	2	---	---	---	---	26	---	---	10	1	---
All others	6	4	---	2	---	5	1	---	---	---	---	---	---	---	6	---	---	---	---	---
Total	230	1,240	300	670	175	2,176	170	2	165	98	---	3	---	1	42	2,548	1	8	13	3

Average per thousand population, 1959.

¹ Registration incomplete.

BIRTH, BY DISTRICTS.¹

Health districts—	Legitimates.			Illegitimates.			Grand total.	Annual birth rate per 1,000.
	Male.	Female.	Total.	Male.	Female.	Total.		
No. 1, Intramuros	795	659	1,454	86	66	152	1,606	50.10
No. 2, Meisic	888	782	1,670	56	42	98	1,768	19.63
No. 4, Sampaloc	755	705	1,460	56	45	101	1,561	35.29
No. 5, Tondo	1,543	1,339	2,882	64	69	133	3,015	41.99
No. 6, Paco	562	544	1,106	12	15	27	1,133	39.33
Total	4,543	4,029	8,572	274	237	511	9,083	34.02

		Living.	Still-births.
Births attended by—			
Physician		2,656	213
Midwife		1,220	29
Family		5,207	236

¹ Registration incomplete.

BIRTHS, ACCORDING TO NUMBER OF CHILDREN BORNE BY MOTHER.

Number of births in the order in which the child was born, whether first child, second child, etc.	Living.			Stillborn.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.	
First	1,092	922	2,014	71	40	111	2,125
Second	797	707	1,504	36	22	58	1,562
Third	651	590	1,241	35	24	59	1,300
Fourth	550	511	1,061	18	21	39	1,100
Fifth	463	385	848	28	23	51	899
Sixth	324	319	643	19	18	37	680
Seventh	286	263	549	18	19	37	586
Eighth	212	203	415	10	14	24	439
Ninth	150	118	268	14	9	23	291
Tenth	109	93	202	13	3	16	218
Eleventh	69	71	140	6	3	9	149
Twelfth	44	24	68	5	3	8	73
Thirteenth	27	26	53	3	3	6	59
Fourteenth	20	17	37	1	1	2	39
Fifteenth	13	6	19				19
Sixteenth	4	6	10				10
Seventeenth	1	2	3				3
Eighteenth	1	2	3				3
Nineteenth		1	1				1
Twentieth	1		1		1	1	2
Twenty-first							
Twenty-second	1		1				1
Twenty-third	1		1				1
Twenty-fourth							
Twenty-fifth	1		1				1
Total	4,817	4,266	9,083	277	201	478	9,561

NUMBER OF DEATHS AND DEATH RATE PER 1,000 AMONG RESIDENTS, BY NATIONALITIES.

Nationality.	Male.	Annual death rate per 1,000.	Female.	Annual death rate per 1,000.	Total.	Annual death rate per 1,000.
Americans	40	11.16	16	8.46	56	10.23
Filipinos	6,127	48.73	5,713	51.37	11,840	49.97
Spaniards	42	17.39	13	6.52	55	12.48
Other Europeans	16	15.57	8	16.70	24	15.93
Chinese	337	22.12	26	18.28	363	21.79
All others	21	14.92	10	13.08	31	15.81
Total	6,583	44.06	5,786	49.22	12,369	46.33

A CLASSIFIED REPORT OF ALL DEATHS OCCURRING IN MANILA, INCLUDING TRANSIENTS.

Social condition.	Number.		
	Male.	Female.	Total.
Married	1,792	1,387	3,179
Divorced	2	1	3
Widowed	462	816	1,278
Single	1,083	362	1,445
Children	4,519	3,920	8,439
Condition not stated	84	17	101
Total	7,942	6,503	14,445

¹ Of this total, there has been included 1 Chinese male, 3 males and 2 females, Filipinos, permanent residence unknown.

Stillbirths	503
Number of deaths with medical attendance	7,585
Number of deaths without medical attendance	6,860

DEATHS, BY AGES.

Ages.	Residents.		Transients.		Total.
	Male.	Female.	Male.	Female.	
Under 30 days	556	338	30	18	942
30 days to under 1 year	1,135	999	270	265	2,669
1 year to under 2 years	808	764	58	46	1,676
2 years to 4 years	969	902	66	54	1,991
5 years to 9 years	455	401	34	36	926
10 years to 14 years	120	79	17	17	233
15 years to 19 years	243	179	72	23	517
20 years to 29 years	537	504	257	96	1,394
30 years to 39 years	396	412	190	79	1,077
40 years to 49 years	418	260	155	34	867
50 years to 59 years	348	251	103	13	715
60 years to 69 years	241	206	57	17	521
70 years to 79 years	180	189	18	6	393
80 years to 89 years	101	169	8	6	284
90 years to 99 years	62	119	1	2	184
100 years and over	5	10			15
Age not stated	9	4	19	3	35
Total	6,583	5,786	1,355	715	14,439

DEATHS AND RATE PER 1,000, BY DISTRICTS, INCLUDING TRANSIENTS.

Health districts.	Deaths.	Annual death rate per 1,000.
No. 1, Intramuros	2,146	65.09
No. 2, Mesic	2,620	28.27
No. 4, Sampaloc	2,055	45.78
No. 5, Tondo	6,306	86.58
No. 6, Paco	1,818	45.26
Total	14,445	53.01

^a Of this total, there has been included 3 males and 2 females, Filipinos; and 1 Chinese male, permanent residence unknown.

NUMBER OF DEATHS, WITH CAUSES, OCCURRING AMONG RESIDENTS AND TRANSIENTS IN THE CITY OF MANILA
(STILLBIRTHS NOT INCLUDED).

Causes of death.	Americans.				Filipinos.				Spaniard.				Other Europeans.				Chinese.				All others.				Total.				Grand total.
	Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.						
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.					
<i>I. General diseases.</i>																													
1. Typhoid fever.....	1		114	66	24	12							1	1							118	67	27	12	224				
4. Malaria.....			22	29	8	6							1	1							24	30	13	6	73				
4a. Malaria cachexia.....			8	5	4																8	5	4		17				
5. Smallpox.....	5	1	3	2	446	391	69	62					1								456	395	73	65	989				
6. Measles.....			5	11																	5	11			16				
7. Scarlet fever.....	1	1																							1	10			
8. Whooping cough.....			1	6																	2	8			10				
9. Diphtheria and croup.....			9	5	1	1															9	5	1	1	16				
10. Influenza.....	1	1	183	241	32	20	1	1					1				20	9			205	244	90	21	560				
12. Asiatic cholera.....			68	40	18	9											1				69	40	19	9	137				
14. Dysentery.....	2	1	3	3	343	330	21	27	5	1	2		2	2			4				364	335	29	31	759				
17. Leprosy.....			1	1	6	1															1	1	6		8				
18. Erysipelas.....			10	6	1																10	6	1		17				
19. Other epidemic diseases.....	1	2	1	2																	1	2			3				
20. Purulent infection and septichæmia.....			16	10	7	5											1				16	12	7	5	40				
22. Anthrax.....			4														1								5				
23. Rabies.....			2																		2				3				
24. Tetanus.....			50	32	10	1											2				53	32	10	1	96				
27. Beriberi.....	1		284	257	83	74											16	2			301	270	86	74	731				
28. Tuberculosis of the lungs.....	1	3	844	761	211	63	9	2	2	1	1		1	1			70	1	19		926	766	238	64	1,994				
29. Acute miliary tuberculosis.....			3	5																	3	6			11				
30. Tuberculous meningitis.....			48	36	7	1							1								49	36	7	1	93				
31. Abdominal tuberculosis.....			41	48	11	2											4	3			45	49	14	2	110				
33. White swellings.....			3	1	1																3	1	1		5				
34. Tuberculosis of other organs.....			7	7	3	4											3				7	8	3	4	17				
35. Disseminated tuberculosis.....			15	7	6												3	2			19	7	8		34				
36. Rickets.....			5	1	1																5	1	1		7				
37. Syphilis.....		1	2	4													4				7	4	2	1	14				
39. Cancer and other malignant tumors of the buccal cavity.....			7	5	2	2											1				8	5	2	2	17				
40. Cancer and other malignant tumors of the stomach, liver.....		1	8	8	6	2											1				9	9	8	3	29				

NUMBER OF DEATHS, WITH CAUSES, OCCURRING AMONG RESIDENTS AND TRANSIENTS IN THE CITY OF MANILA
(STILLBIRTHS NOT INCLUDED)—Continued.

Causes of death.	Americans.				Filipinos.				Spaniard.				Other European.				Chinese.				All other.				Total.				Grand total.	
	Resi- dents.		Trans- ients.		Residents.		Transients.		Resi- dents.		Trans- ients.		Resi- dents.		Trans- ients.		Resi- dents.		Trans- ients.		Resi- dents.		Transients.							
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.						
<i>I. General diseases—Continued.</i>																														
41. Cancer and other malignant tumors of the peritoneum, intestines, rectum.....			3	1	7	2											2								3	1	9	2	15	
42. Cancer and other malignant tumors of the female genital organs.....				11		2														1								3	14	
43. Cancer and other malignant tumors of the breast.....	1			5		1																						1	8	
44. Cancer and other malignant tumors of the skin.....				2																									2	2
45. Cancer and other malignant tumors of other organs and of organs not specified.....			21	9	3						1														21	9	4		34	
46. Other tumors (tumors of the female genital organs excepted).....					1																				1	1	1		3	
47. Acute articular rheumatism.....			5	4																					5	4			9	
48. Chronic rheumatism and gout.....			7	9																					7	9			16	
49. Scurvy.....			4	7																					4	7			11	
50. Diabetes.....			2	4	1						1														6	5	2		13	
51. Exophthalmic goitre.....				1																					1	1			2	
53. Leucæmia.....			1																						1	2	6	3	14	
54. Anæmia, chlorosis.....											3	1													2	6			9	
55. Other general diseases.....			1																						1	1			2	
56. Alcoholism (acute or chronic).....			2	1														1							2	2			4	
<i>II. Diseases of the Nervous System and of the Organs of the Special Sense.</i>																														
60. Encephalitis.....																													7	
61. Simple meningitis.....	1		3	201	16	16																				4	201	16	17	481
63. Other diseases of the spinal cord.....			247	2																						247	3		6	
64. Cerebral hæmorrhage, apoplexy.....				65	44	5	5	2	1									1								91	45	7	5	148
65. Softening of the brain.....				1														6								7	2	1	1	11
66. Paralysis without specified cause.....				21	17																					21	17			38
67. General paralysis of the insane.....				1																						1				1
68. Other forms of mental alienation.....	1		11		35	2																				15	2	36	2	55

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE.

Causes of death.	Under 30 days.						30 days to under 1 year.						1 year to under 2 years.					
	Amer- ican.		Span- iards.		Other Euro- peans.		Amer- ican.		Span- iards.		Other Euro- peans.		Amer- ican.		Span- iards.		Other Euro- peans.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
<i>I. General diseases.</i>																		
1. Typhoid fever.....										1					2			
4. Malaria.....										1					1			
4a. Malarial cachexia.....																		
5. Smallpox.....	2	1					2	106			1		1	96		1	1	
6. Measles.....							1	1					1					
8. Whooping cough.....																		
9. Diphtheria and croup.....																		
10. Influenza.....	1	1						7			1			12				
12. Asiatic cholera.....														4				
14. Dysentery.....	2						2	24						75		1		
18. Erysipelas.....	2	1						6						1				
20. Purulent infection and septicæ- mia.....								2										
24. Tetanus.....	37	22																
27. Beriberi.....	27	19			1	1		284						11		9		
28. Tuberculosis of the lungs.....														4		5		
30. Tuberculous meningitis.....														12		8		
31. Abdominal tuberculosis.....														2				
34. Tuberculosis of other organs.....														1				
35. Disseminated tuberculosis.....														2				
36. Rickets.....								2										
37. Syphilis.....																		
46. Other tumors (tumors of the fe- male genital organs excepted).....																		
49. Scurvy.....																		
53. Leuchæmia.....														1				
54. Anæmia, chlorosis.....	1																	
<i>II. Diseases of the nervous system and of the organs of special sense.</i>																		
60. Encephalitis.....																		
61. Simple meningitis.....																		
64. Cerebral hæmorrhage, apoplexy.....		2						53						69		55		

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE—Continued.

Causes of deaths.	Under 30 days.												30 days to under 1 year.						1 year to under 2 years.													
	Amer- ican.		Filipi- nos.		Span- iards.		Other Euro- peans.		Chi- nese.		Amer- ican.		Filipinos.		Span- iards.		Other Euro- peans.		Chi- nese.		Amer- ican.		Filipinos.		Span- iards.		Other Euro- peans.		Chi- nese.		All oth- ers.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
<i>XI. Diseases of early infancy—Ctd.</i>																																
152. Other diseases peculiar to early infancy:																																
(1) Injuries at birth (not still-born)																																
(2) Other causes peculiar to early infancy																																
153. Lack of care																																
<i>XIII. Affections caused by external causes.</i>																																
167. Burns (conflagration excepted)																																
<i>XIV. Ill-defined diseases.</i>																																
189. Cause of death not specified or ill-defined																																
Total	4	2 574 347	2	1	1	3 4	2	2	6	6 1,386 1,246	4	2	4	9 3 3	1	2	1	3 3	5	1 856 803	5	2										
Grand total	6	921	2	2	7	4	4	2 632	12	2,632	4	2 13	6	1,659	3	1	6	1	1,659	3	1	6	1									

V. Diseases of the digestive system.

103. Other diseases of the stomach (cancer excepted)..... 1 2
 105. Diarrhoea and enteritis (2 years and over)..... 1 175 160 4
 107. Intestinal parasites..... 1
 108. Appendicitis and typhlitis..... 4
 109. Hernias, intestinal obstructions..... 3
 110. Other diseases of the intestines..... 1
 111. Acute yellow atrophy of the liver..... 4
 115. Other diseases of the liver..... 2
 117. Simple peritonitis (nonpuerperal)..... 3

VI. Nonvenereal diseases of the genito-urinary system and annexa.

119. Acute nephritis..... 22
 120. Bright's disease..... 24

VIII. Diseases of the skin and of the cellular tissue.

142. Gangrene..... 5
 144. Acute abscess..... 2
 145. Other diseases of the skin and annexa..... 1

IX. Diseases of the bones and of the organs of locomotion.

146. Diseases of the bones (tuberculosis excepted)..... 2 1
 147. Diseases of the joints (tuberculosis and rheumatism excepted)..... 1

X. Malformations.

150. Congenital malformations (stillbirths not included);
 (3) Other congenital malformations..... 1

XI. Diseases of early infancy.

151. Congenital debility, icterus and sclerema..... 2
 153. Lack of care..... 1

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE—Continued.

Causes of death.	2 years to 4 years.						5 years to 9 years.						10 years to 14 years.						All oth-ers.					
	Amer-icans.		Filipinos.		Span-iards.		Other Euro-peans.		Chi-nese.		All oth-ers.		Amer-icans.		Filipi-nos.		Span-iards.			Other Euro-peans.		Chi-nese.		All oth-ers.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.		Male.	Female.	Male.	Female.	
<i>XIII. Affections caused by external causes.</i>																								
165b. Other acute poisonings																								
167. Burns (conflagration excepted)			1																					
168. Absorption of deleterious gases (conflagration excepted)			2																					
169. Accidental drowning			1																					
170. Traumatism by firearms																								
172. Traumatism by fall			1																					
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)																								
185. Fractures (cause not specified)																								
186. Other external violence																								
<i>XIV. Ill-defined diseases.</i>																								
189. Cause of death not specified or ill-defined	2		7		8								1		6		2						1	
Total	5	4	1,021	948	2	1	4	1	3	2	4	3	479	434	2	4	2	4	1	1	132	95	5	
Grand total	9	1,969	0	3	5	5	7	913	0	2	4	1	1	227	0	0	5	0					0	

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE.

[illegible]

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE.

Causes of death.	40 to 49 years.						50 to 59 years.						60 to 69 years.							
	Amer- icans.		Span- iards.		Other Euro- peans.		Chi- nese.		All oth- ers.		Amer- icans.		Span- iards.		Other Euro- peans.		Chi- nese.		All oth- ers.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																				
1. Typhoid fever	1	5	3	3	1				2	3									1	2
4. Malaria		3	3						5	7								1	2	
4a. Malaria cachexia		2							2	1										
5. Smallpox									1											
10. Influenza	1	20	18		7		1		8	12		1						6	9	1
12. Asiatic cholera		6	7						1	3								1	5	2
14. Dysentery		3	5	1	1		2		1	8		4						10	12	
17. Leprosy	2	1					1											1		1
18. Erysipelas																				
20. Purulent infection and septichæmia		2	1				1		4	1								2	1	
22. Anthrax																		1		
23. Rabies		1																		
24. Tetanus		3	2				1		1									1		
27. Beriberi		5	2				6		2									1		
28. Tuberculosis of the lungs		2	186	127	2	1	41	1	122	98		4						86	63	3
29. Acute miliary tuberculosis		1	1															1		8
30. Tuberculous meningitis		2	4				4			8								8	4	1
31. Abdominal tuberculosis		4								2	1							1		
34. Tuberculosis of other organs		1	1				2		5											
35. Disseminated tuberculosis		1	1				2													
37. Syphilis	1	1					2													
39. Cancer and other malignant tumors of the buccal cavity		1	2				1		1	3								3	1	
40. Cancer and other malignant tumors of the stomach, liver		2	1						1	2		1						2	3	
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum		1	1																	
42. Cancer and other malignant tumors of the female genital organs			3															1		
43. Cancer and other malignant tumors of the breast			2						1	2										
44. Cancer and other malignant tumors of the skin																		1		

I. General diseases.

41. Cancer and other malignant tumors of the peritoneum, intestines, rectum.					10	3		2			15
42. Cancer and other malignant tumors of the female genital organs.	2					13					14
43. Cancer and other malignant tumors of the breast.	1				1	6		1			8
44. Cancer and other malignant tumors of the skin.	1					2					2
45. Cancer and other malignant tumors of other organs and of organs not specified.	2					24	9	1			34
46. Other tumors (tumors of the female genital organs excepted).						1	1	1			3
47. Acute articular rheumatism.						5	5	4			9
48. Chronic rheumatism and gout.	2	3				7	9				16
49. Scurvy.						4	7				11
50. Diabetes.	1					3	4	1	1	4	13
51. Exophthalmic goitre.						2	2				2
52. Leucæmia.						1	1				1
53. Anæmia, chlorosis.						1	10	2	1		14
54. Anæmia, chlorosis.						1	1				1
55. Other general diseases.						2	1			1	4
56. Alcoholism (acute or chronic).	1										
<i>II. Diseases of the nervous system and of the organs of special sense.</i>											
60. Encephalitis.	1					4	1			1	7
61. Simple meningitis.	1					263	217				481
62. Other diseases of the spinal cord.						2	2	1		1	6
63. Cerebral hæmorrhage, apoplexy.	16	10	1	1		70	49	3	1	22	148
64. Softening of the brain.	1					1	3			6	11
65. Paralysis without specified cause.	4	5				21	17				38
66. General paralysis of the insane.						1					1
67. Other forms of mental alienation.	2		2			46	4			2	55
68. Epilepsy.						2					2
69. Convulsions of infants (under 5 years of age).						137	112		1	4	256
70. Chorea.						2					2
71. Other diseases of the nervous system.						5					5
72. Diseases of the ears.						1					1

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE—Continued.

Causes of death.	70 years and over.										Unknown.						Total.						Grand total.										
	Amer- icans.		Span- iards.		Other Euro- peans.		Chi- nese.		All oth- ers.		Amer- icans.		Span- iards.		Other Euro- peans.		Chi- nese.		All oth- ers.														
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.													
<i>XIII. Affections caused by external causes—Continued.</i>																																	
165b. Other acute poisonings																																	45
167. Burns (conflagration ex- cepted)																																	8
168. Absorption of deleterious gases (conflagration ex- cepted)																																	2
169. Accidental drowning																																	21
170. Traumatism by firearms																																	5
171. Traumatism by cutting or piercing instruments																																	5
172. Traumatism by fall																																	5
175. Traumatism by other crush- ing (vehicles, railways, landslides, etc.)																																	15
176. Injuries by animals																																	1
179. Effects of heat																																	1
181. Electricity (lightning ex- cepted)																																	1
182. Homicide by firearms																																	3
183. Homicide by cutting or pier- cing instruments																																	3
185. Fractures (cause not speci- fied)																																	5
186. Other external violence																																	5
<i>XIV. Ill-defined diseases.</i>																																	18
189. Cause of death not specified or ill-defined																																	24
Total	2 2 355	497	7 2 4	7							1 28	7					2				65 277,288	6,405	58 16 27	9 414	28 95	18	14,445						18
Grand total	4	852	9 4	7	0	0	0	0	0	0	1 35	0	0	0	0	0	2	0	0	0	92	13,688	74 36	442	113	14,445							14,445

NOTES.—Of the grand total, there has been included 3 males and 2 females, Filipinos; and 1 Chinese male, permanent residence unknown.

DEATHS, BY OCCUPATIONS.

Occupation.	Number.	
	Male.	Female.
Professional:		
Architects, artists, teachers of art, etc	2	
Clergymen, priest, nuns, etc	17	8
Engineers and surveyors	6	
Journalists	3	
Lawyers	6	
Musicians and teachers of music	24	1
Nurses and midwives		13
Physicians and surgeons	3	
Teachers (schools)	9	9
Others of this class	16	
Clerical and official:		
Bookkeepers, clerks and copyists	212	2
Bankers, brokers and officials of companies	4	
Collectors, auctioneers and agents	8	
Stenographers and typewriters		
Telegraph and telephone operators	2	
Others of this class	31	1
Mercantile and trading:		
Apothecaries, pharmacists, etc	8	
Commercial travellers	4	1
Merchants and dealers	153	11
Hucksters and peddlers	5	6
Shopkeepers	20	56
Others of this class	24	37
Public entertainment:		
Hotel and boarding house keepers		
Saloon keepers, liquor dealers, bartenders, and restaurants keepers	1	
Personal service, police and military:		
Barbers and hairdressers	32	
Janitors and sextons	23	1
Policemen, watchmen, and detectives	27	
Soldiers, sailors, and marines	81	
Other of this class	11	
Laboring and servants:		
Laborers (not agricultural)	963	9
Launderers	19	255
Servants	136	154
Manufacturing and mechanical industry:		
Artificial flower and paper box makers		
Bakers and confectioners	9	
Blacksmiths	9	1
Boot, shoe and slipper makers	23	
Brewers, distillers and rectifiers	1	
Butchers	2	1
Cabinet makers and upholsterers		
Carpenters and joiners	135	
Cigar makers, and tobacco workers	84	163
Clock and watch repairers, jewelers, etc	17	
Compositors, printers, etc	15	
Coopers	1	
Embroiderers (gold, silk, etc)	4	36
Engineers and firemen (not locomotive)	17	
Glass blowers and glass workers		
Hat and cap makers	6	1
Iron and steel workers		
Leather workers	4	
Machinists	40	
Marble and stone cutters	7	
Masons (brick and stone)	24	
Mill and factory operative (textiles)		3
Miller (flour and grist)		
Milliners		
Painters, glaziers, and varnishers	35	
Plumber, gas and steam fitters	8	
Tailors, dressmakers and seamsters	49	329
Tinners and tinware makers	12	
Others of this class	21	6
Agriculture, transportation, and other outdoor:		
Boatmen and canalmen	15	1
Draymen, drivers and teamsters	113	
Farmers, planters, and farm laborers	240	3
Gardeners, florists, nurserymen, etc	11	
Livery stable keepers and hostlers		
Lumbermen and raftsmen		
Miners and quarrymen		
Sailors, pilots, fishermen, and oystermen	141	7
Steam railroad employees	14	
Stock raisers, herders and drovers	1	
Others of this class	18	1
All other occupations	351	123
Total	3,277	1,239
Grand total	4,516	

INFANT MORTALITY.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Anæmia acute				1		1
Angiocholitis					1	1
Arthritis, suppurative					1	1
Athrepsia				1	43	44
(Parrot's disease)					1	1
Asphyxia, neonatorum	11		1			12
Atrophic					5	5
Atelectasis of the lungs	1		2	3	1	7
Bronchitis:						
Acute				1	644	645
Capillary					16	16
Chronic					65	65
Grippal					7	7
Bronchopneumonia		1		3	189	193
Grippal					12	12
Burns					1	1
Cardiac dilatation with hypertrophy of right side					1	1
Cholelithiasis					1	1
Congenital asthma					2	2
Congenital atelectasis of the lungs		1			2	3
Congenital debility	201	36	10	255	140	642
Congenital malformation of skull				1		1
Consumption					1	1
Congenital malformation					1	1
Diphtheria					1	1
Diarrhoea and enteritis					31	31
Dyspepsia					1	1
Gastrointestinal					5	5
Dysentery					55	55
Eczema					2	2
Empyema, pleural					1	1
Endocarditis (infectious)					1	1
Enteritis, acute				1	96	97
Enterocolitis					12	12
Erysipelas					14	14
Fibrinous pleurisy					2	2
Fibrino-purulent pleurisy and chronic pericarditis					1	1
Furunculosis					3	3
Fever of unknown character					1	1
Gastritis acute					1	1
Gastroenteritis				1	140	141
Grippe	1			1	4	6
Haemorrhage:						
Internal traumatism					1	1
Intestinal				1		1
Nasal				1		1
Newborn					1	1
Umbilical	1			4	1	6
Haemorrhagic, acute and follicular colitis					1	1
Haemophilia	1				1	2
Heart, dilation					1	1
Hypertrophy					1	1
Hydrocephalus					2	2
Haemorrhage, neonatorum				1		1
Lungs and kidneys		1				1
Infantile diarrhoea					1	1
Beriberi				24	573	597
Convulsions	3	1		52	159	215
Icterus				4	20	24
Ileocolitis					12	12
Imperforated anus				2		2
Indigestion, gastric					3	3
Gastrointestinal, chronic					2	2
Inanition					1	1
Intestinal obstruction					1	1
Lack of care					1	1
Malarial fever					1	1
Malnutrition		1		1	187	189
Meningitis:						
Acute				3	92	95
Cerebral					10	10
Suppurative					1	1
Tuberculous					12	12
Measles					3	3
Myocarditis, acute		1			2	3
Mastoid abscess					1	1

INFANT MORTALITY—Continued.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Nephritis:						
Acute					22	22
Chronic					18	18
Oedema of the glottis					1	1
Omphalitis, acute peritonitis				2		2
Omphalorrhagia					1	1
Organic heart diseases (congenital)				1	2	3
Pleurisy					2	2
Petechial hæmorrhagic of viscera			1	1		2
Pneumonia, lobar					6	6
Premature birth	17	5		1	2	25
Postmortem decomposition					1	1
Persistence of foramen Botallo.				1	2	3
Pleuropneumonia					1	1
Pulmonary congestion				1		1
Purulent infection and septicæmia					7	7
Rickets					2	2
Sclerema (oedematous)				1		1
Subdural left parietal					1	1
Scrofula					2	2
Scurvy					2	2
Smallpox				1	195	196
Syphilis					1	1
Smallpox, probable					1	1
Tetanus, umbilical				58	3	61
Tuberculosis:						
Intestinal					2	2
Peribronchial					1	1
Pulmonary					1	1
Typhoid fever					1	1
Undetermined cause	2				2	4
Whooping cough					9	9
Total	238	47	14	428	2,884	3,611

COMPARATIVE MORTALITY FROM JANUARY, 1908, TO DECEMBER, 1918, INCLUSIVE.

Month.	1908		1909		1910		1911	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	1,117	a 58.87	720	a 37.94	729	b 36.64	653	b 32.82
February	733	a 41.29	616	a 35.94	638	b 35.50	536	b 29.82
March	720	a 37.94	218	a 32.57	642	b 32.26	574	b 28.85
April	626	a 34.09	550	a 29.95	594	b 30.66	647	b 28.41
May	633	a 33.36	544	a 28.67	604	b 30.35	609	b 30.60
June	678	a 36.92	552	a 30.06	646	b 33.55	693	b 35.99
July	977	a 51.49	691	a 36.41	799	b 40.15	830	b 41.71
August	1,148	a 60.50	679	a 35.78	731	b 36.74	878	b 44.13
September	1,362	a 74.17	649	a 35.34	664	b 34.48	741	b 38.48
October	991	a 52.23	700	a 36.89	705	b 35.43	686	b 34.48
November	837	a 45.58	778	a 42.37	642	b 33.34	782	b 40.61
December	824	a 43.42	839	a 44.22	635	b 31.91	698	b 35.08
Total	10,646	a 47.62	7,936	a 35.50	8,029	b 34.25	8,227	b 35.09

^a Death rate computed on population of 223,542 (Health census, 1907).

^b Death rate computed on population of 234,409 (Health census, 1910).

**COMPARATIVE MORTALITY FROM JANUARY, 1908, TO DECEMBER,
1918, INCLUSIVE—Continued.**

Month.	1912		1913		1914		1915	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	698	b 35.08	502	b 25.23	570	d 25.15	678	d 29.72
February	611	b 32.82	445	b 24.76	499	d 24.38	546	d 26.63
March	732	b 36.79	451	b 22.66	462	d 20.39	570	d 25.15
April	671	b 34.85	442	b 22.95	464	d 21.16	551	d 25.13
May	701	b 35.23	504	b 25.33	430	d 18.97	557	d 24.58
June	606	b 31.42	442	b 22.95	387	d 17.65	557	d 25.40
July	689	b 34.63	410	c 19.49	540	d 23.83	605	d 26.70
August	705	b 35.43	439	c 20.87	581	d 25.64	602	d 26.57
September	661	b 34.33	529	c 25.99	693	d 31.60	542	d 24.71
October	633	b 31.81	550	c 26.15	624	d 27.54	553	d 24.40
November	573	b 29.76	590	c 28.99	651	d 29.69	482	d 21.98
December	540	b 27.14	600	c 28.53	686	d 30.67	578	d 25.51
Total	7,819	b 33.35	5,904	c 24.48	6,587	d 24.67	6,820	d 25.54

Month.	1916		1917		1918	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	634	d 27.96	485	d 21.40	713	d 31.46
February	559	d 26.37	469	d 22.91	685	d 33.47
March	593	d 26.17	539	d 23.78	878	d 38.75
April	567	d 25.85	500	d 22.80	854	d 43.51
May	548	d 24.18	545	d 24.05	1,125	d 50.09
June	513	d 23.39	500	d 22.60	1,242	d 56.64
July	573	d 23.29	555	d 24.49	1,083	d 47.80
August	717	d 31.64	615	d 27.14	957	d 42.23
September	827	d 37.71	548	d 24.99	917	d 41.82
October	351	d 25.31	598	d 26.39	1,121	d 49.47
November	494	d 22.53	639	d 29.14	1,867	d 85.15
December	589	d 25.99	689	d 30.41	817	d 36.05
Total	7,165	d 26.84	6,682	d 25.03	12,369	d 46.33

MORTALITY COMPARED WITH SAME PERIOD OF PREVIOUS YEARS.

Year.	First quarter.		Second quarter.		Third quarter.		Fourth quarter.		Total.	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
1908	2,570	46.14	1,937	34.77	3,487	61.92	2,652	47.09	10,646	47.62
1909	1,954	35.47	1,646	29.55	2,019	35.85	2,317	41.14	7,936	35.50
1910	2,009	34.78	1,844	31.57	2,194	37.15	1,982	33.56	8,029	34.25
1911	1,763	30.52	1,849	31.65	2,449	41.47	2,166	36.68	8,227	35.09
1912	2,041	34.94	1,977	33.85	2,055	34.80	1,746	29.57	7,819	33.35
1913	1,398	24.20	1,388	23.76	1,378	22.08	1,740	27.88	5,904	24.48
1914	1,531	23.27	1,281	19.26	1,814	26.97	1,961	29.16	6,587	24.67
1915	1,793	27.25	1,665	25.03	1,749	26.01	1,613	23.98	6,820	25.54
1916	1,786	26.85	1,628	24.47	2,117	31.48	1,634	24.30	7,165	26.84
1917	1,493	22.69	1,545	23.23	1,718	25.55	1,926	28.64	6,682	25.03
1918	2,276	34.60	3,331	50.08	2,957	43.97	3,805	56.58	12,369	46.33

^b Death rate computed on population of 234,409 (Health census, 1910)

^c Death rate computed on estimated population 247,756.

^d Death rate computed on population of 266,943 (Health census, 1914).

CHOLERA AND PLAGUE, CITY OF MANILA.

Nationality.	Cholera.				Plague.			
	Cases.		Deaths.		Cases.		Deaths.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
American.....	1	1	1					
Filipinos.....	115	64	78	43				
Spaniards.....								
Other Europeans.....								
Chinese.....	1		1					
All others.....								
Total.....	117	65	80	43				

District and age.	Cholera.		Plague.	
	Cases.	Deaths.	Cases.	Deaths.
Health districts				
No. 1, Intramuros.....	20	13		
No. 2, Meisic.....	37	23		
No. 4, Sampaloc.....	19	11		
No. 5, Tondo.....	78	55		
No. 6, Paco.....	28	21		
Total.....	183	123		
Ages:				
Under 1 year.....				
1 year to 9 year.....	51	44		
10 years to 19 years.....	22	10		
20 years to 29 years.....	44	23		
30 years to 39 years.....	27	18		
40 years to 49 years.....	18	11		
50 years and over.....	20	17		
Unknown.....				
Total.....	182	123		

Number of cases found alive, cholera 128; plague, 0.

Number of cases found dead, cholera, 54; plague, 0.

SMALLPOX, CITY OF MANILA.

A total of 1,326 cases and 869 deaths of smallpox occurred during the period covered by this report.

VARILOID, CITY OF MANILA.

A total of 521 cases and 11 deaths of varioloid occurred during the period covered by this report.

VARICELLA, CITY OF MANILA.

A total of 315 cases of varicella occurred during the period covered by this report.

TUBERCULOSIS CASES REPORTED IN THE CITY OF MANILA DURING THE FISCAL YEAR 1918.

[Closed March 16, 1919.]

Nationality.	Health districts—										Total.
	No. 1.		No. 2.		No. 4.		No. 5.		No. 6.		
	Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	Male.	Fe-male.	
Americans											
Filipinos	31	26	224	183	96	65	190	159	91	65	1,130
Spaniards			1								1
Other Europeans			1								1
Chinese			31	1	1		1		1		35
All others							1				1
Total	31	26	257	184	97	65	192	159	92	65	1,168

Also reported 115 males and 73 females, provincial cases; 3 males and 5 females, permanent residence unknown.

RAT CAMPAGIN OPERATIONS.

Number of spring traps set	331,498
Number of rats caught with spring traps	70,980
Number of wire traps set	341
Number of rats caught with wire traps	31
Number of rats caught by dogs	6
Number and kind of baits set (coconuts)	596,339
Number of poison portions placed	665,706
Number of rats found poisoned	3,730
Number of rats killed by clubs and other weapons	11,780
Number of rats found dead from other causes	3,366
Total number of rats otherwise caught or killed	89,893
Total number of rats sent to Laboratory for examination	89,893
Rats found positive for plague	0

MOSQUITO CAMPAIGN OPERATIONS.

Houses inspected during the year	136,996
Houses where breeding places found	11,376
Breeding places found in houses	12,937
Vessels ordered emptied or removed	11,113
Drains ordered cleaned	6,660
Lineal feet of drains ordered dug	1,985
Breeding places oiled on private premises	112,717
Breeding places oiled on public premises	89,972
Water receptacles overturned	12,112
Square feet of grass ordered cut	3763
Cans of oil used	2,4193
Sanitary orders issued	1,828
Insanitary conditions reported to health stations	145
Number of complaints attended	524
Number of fines:	
P2 each	2
3 each	22
5 each	83
8 each	1
10 each	9
15 each	1
20 each	2
70 each	1
75 each	1
Fly inspector's report:	
Stables inspected during the year	12,489
Stables ordered cleaned	8,732
Stables cleaned	7,594
Market inspections made	182
Mosquito brigade:	
Number of disinfections made of public midden sheds	15,032
Number of liters of disinfectans used	1,331,700
Number of bayones of lime used	3053

SANITARY ORDERS.

Rat-foothing:	
Sanitary orders remaining December 3, 1917	35
Sanitary orders issued	3
Sanitary orders completed	23
Sanitary orders pending action by city fiscal	6
Sanitary orders awaiting action	9
Cleaning:	
Orders remaining December 31, 1917	0
Orders issued	3,577
Orders completed	3,570
Orders awaiting action	7

CITY MORGUE REPORT.

Disposition.	Number of bodies.	Disposition.	Number of bodies.
Remaining from last year	52	Transferred to:	
Received	1,715	Army morgue	10
Total	1,767	Government museum	6
Buried by:		Provinces	81
City	731	Remaining at end of the year	81
Family	858	Total	1,767

DISPOSITION OF DEAD BODIES.

Disposition.	Number.	Disposition.	Number.
Buried at cemetery of—		Remaining in—	
Balicbalic	595	Army Morgue	4
Binondo	5,248	City Morgue	73
Chinese	500	Private Morgues	6
Norte	6,499	Mary Johnston Hospital (footus)	1
Pandacan:		Mary Chiles Hospital (footus)	1
Filipino church	214	Philippine Dental College	2
Roman Catholic	46	Santo Tomas University	44
Santa Ana	78	Santo Tomas Museum (footus)	2
Singalong	1,149	Shipped to the United States	2
Otherwise disposed of—		Transferred to—	
Cremated	117	Government Museum (stillbirths)	41
		Provinces	558
		Total	15,180

DISINTERMENTS.

Cemetery.	Number.	Cemetery.	Number.
Balicbalic	8	Pandacan	3
Binondo	20	Santa Ana	3
Chinese	49	Santa Cruz	39
Loma	17	Singalong	1
Malate	8	Tondo	14
Norte	17	Total	412
Paco	233		

GENERAL INSPECTIONS OF HOUSES, PREMISES, VAULTS, ETC., WITH IMPROVEMENTS ORDERED, WHITEWASHED, CLEANED, ETC., BY MEDICAL INSPECTORS, SANITARY INSPECTORS, AND ASSISTANT SANITARY INSPECTORS.

1. Inspections of houses by sanitary inspectors	22,679
2. Reinspections of houses for verification of work ordered	6,984
3. Inspection of houses by assistant sanitary inspectors and sanitary policemen	189,811
4. Reinspection of houses by assistant sanitary inspectors and sanitary policemen	31,086
5. Houses ordered cleaned (written)	4,673
6. Houses ordered cleaned (verbal)	19,182
7. Houses cleaned	21,716
8. Houses ordered whitewashed and painted	669
9. Houses whitewashed and painted	664
11. Number of houses recommended condemned and removed	17
12. Number of houses condemned and removed	0
13. Number of localities where "squatters" are located	0
14. Number of samples of water, foods, etc., sent to laboratory	35,735
15. Number of reports for same	25,489
16. Number of fire-plugs opened or closed for sanitary purposes	17
17. Number of hydrants recommended reopened	0
18. Number of houses where garbage has not been removed for two days	118
19. Number of persons reported sick to municipal physicians	15,877
20. Cesspools and vaults ordered cleaned	4
21. Cesspools cleaned	107
22. Yards ordered cleaned	12,874
23. Yards cleaned	12,624
24. Yards ordered repaired (repaved, etc.)	0
25. Yards repaired	0
26. Number of cholera cases reported by sanitary inspectors	71
27. Number of cholera cases found "alive"	286
28. Number of cholera cases found "dead"	42
29. Number of orders issued during the quarter	5,576
30. Number of orders complied with during the quarter	4,992
31. Number of orders awaiting action	257
32. Number of orders pending in court	151
33. Average number of food tiendas in the districts	2,875
34. Number of persons convicted for violation of prohibition orders	397
35. Average number of regular inspectors on duty	72
36. Average number of regular emergency inspectors on duty	22
37. Number of lepers sent to San Lazaro Hospital	33
38. Number of plague cases reported	0
39. Number of smallpox cases reported	1,516

REPORTS OF DISINFECTIONS.

Causes for disinfections.	Disinfections.	Contacts.
Anthrax	2	0
Bubonic	1	6
Bubonic plague contacts	2	6
General for bubonic plague	1	14
General for bubonic plague suspected	2	0
Carbuncle	1	3
Chickenpox	2	5
Cholera	1,310	23,208
Cholera carrier	6	36
Cholera contacts	24	169
Cholera observation	4	36
Cholera, suspected	557	5,819
Cholera, suspected (contacts)	17	42
Cholera, suspected and varioloid	1	15
Cholera vibrio carrier	52	803
General for cholera, suspected	242	1,775
General for cholera vibrio carrier	205	1,118
Dengue	2	0
Diarrhea	5	12
Diarrhea enteritis	6	28
Diphtheria	45	204
Diphtheria carrier	2	5
Diphtheria, suspected	15	60
General for diphtheria	58	131
General for diphtheria, suspected	25	29
Dysentery	996	5,146
Dysentery acute	15	73
Dysentery contacts	6	6
Dysentery carrier	8	27
Dysentery and cholera vibrio carrier	3	45
Dysentery chronic	1	4
Dysentery and leprosy	1	6
General for dysentery	613	3,050
General for dysentery acute	54	287
General for dysentery carrier	1	0
Enteritis	2	8
Gastro enteritis observation for cholera	4	

REPORTS OF DISINFECTIONS—Continued.

Causes for disinfections.	Disin- fec- tions.	Con- tacts.
Grippe	62	26
Gonorrhœa	1	6
Hookworm amoebæ	1	0
Human remins	182	0
Insanitary	476	397
Insanitary (fleas)	3	0
Insanitary (flies)	33	1
Insanitary and vermin	1	0
General for insanitary	2	0
Leprosy	49	133
Leprosy (contacts)	3	7
Leprosy, suspected	20	41
Leprosy, suspected (contacts)	1	0
Leprosy and vibrio carrier	1	0
Malaria fever	1	0
Measles	38	120
Meningitis	1	0
Mosquitoes and insanitary	2	0
Mumps	32	30
Observation for cholera	4	7
Observation for plague	1	3
Ophthalmia gonorrhœic	1	3
Paratyphoid	1	4
Perutysis	1	4
Pneumonia	2	6
Pneumonia grippal	1	0
Pneumonia plague	2	47
Pneumonia plague contacts	3	105
Pulmonary tuberculosis	198	357
Pulmonary tuberculosis suspected	1	0
Redisinfection for dysentery	6	21
Smallpox	1,181	4,900
Smallpox contacts	28	175
Smallpox, suspected	7	29
Smallpox and 1 measles	1	12
General for smallpox	14	90
Sudden death	1	0
Tetanus	36	93
Tuberculosis	78	33
Typhoid fever	350	2,021
Typhoid fever contacts	4	12
Typhoid fever, suspected	12	77
General for typhoid fever	292	1,432
General for typhoid fever suspected	48	72
Undetermined	6	11
Varicella	380	1,821
Varicella contacts	2	12
Varioloid	300	1,140
Varioloid contacts	16	86
Varioloid, suspected	3	2
Vermis	12	0
Total	8,192	55,597

REPORT OF ACTION TAKEN ON APPLICATIONS FOR LICENSES.

Approved	8,675
Disapproved	425
Total acted upon	9,100

CHOLERA IN THE PROVINCES.

[Closed March 16, 1919.]

Towns and provinces.	Cases.	Deaths.	Mor- tality.
Albay:			<i>Per ct.</i>
Albay	1	1	100.00
Antique:			
San Jose	5	5	100.00
Bataan:			
Abucay	2	1	
Balanga	17	14	
Orion	5	3	
Pillar	5	5	
Samal	9	9	
Total	38	32	84.21
Batangas:			
Batangas	170	140	
Bauan	217	146	
Bolbok	52	39	
Ibaan	1	1	
Lipa	12	8	
Lobo	7	6	
Mabini	4	2	
Rosario	27	30	
San José	7	3	
Total	497	375	75.45
Rohol:			
Albuquerque	7	6	
Anda	48	22	
Antequera	29	26	
Baclayon	30	29	
Balilijan	23	18	
Calace	125	114	
Cancijay	28	18	
Corella	13	13	
Cortes	17	14	
Dimiao	23	20	
Duero	2	1	
Guindulman	53	37	
Inabanga	95	74	
Jetafe	16	16	
Loay	44	33	
Lobero	1	1	
Loboc	55	40	
Loon	344	230	
Mabini	40	27	
Maribojoc	9	5	
Panglao	29	20	
Sevilla	3	3	
Sierra Bullones	21	12	
Sikatuna	9	7	
Tagbilaran	10	8	
Talibon	18	16	
Tubigon	153	127	
Ubay	13	10	
Valencia	124	63	
Total	1,382	1,010	73.08
Bulacan:			
Bigaa	3	1	
Bocaue	10	9	
Calumpit	2	3	
Hagonoy	35	20	
Malolos	4	5	
Marilao	1		
Meycauayan	1		
Obando	11	7	
Paombong	1	1	
Polo	2		
Quinua	3	2	
Santa Maria	4	4	
Total	77	52	67.53

CHOLERA IN THE PROVINCES—Continued.

Towns and provinces.	Cases.	Deaths.	Mor- tality.
Capiz:			<i>Per ct.</i>
Altavas	1	1	
Banga	8	5	
Calivo	35	30	
Capiz	45	35	
Dao	8	7	
Dumalag	4	4	
Dumarao	1	1	
Iuisan	7	6	
Jamindan	1		
Lezo	4	5	
Libacao	1		
Malinao	3	3	
Mambusao	3	3	
New Washington	36	33	
Panay	2	1	
Panitan	11	8	
Pilar	48	43	
Pontevedra	30	25	
Sigma	2	1	
Tapaz	3	3	
Total	253	214	84.58
Cavite:			
Bacoor	74	54	
Cavite	17	15	
Dasmariñas	33	25	
Imus	41	24	
Indang	1	1	
Kauit	11	5	
Malabon	37	26	
Maragondong	9	6	
Mendez Nuñez	2	2	
Naic	27	18	
Noveleta	2	2	
Rcsario	38	35	
Tanza	53	37	
Total	345	250	72.46
Cebu:			
Alcoy	4	2	
Alegria	12	8	
Aloguinsan	1	2	
Argao	11	7	
Badian	12	9	
Balamban	36	23	
Bantayan	91	58	
Barili	14	6	
Bogo	2	1	
Cebu	86	62	
Cordoba	18	8	
Dalaguete	18	8	
Danao	9	6	
Dumanjug	17	6	
Ginatilan	11	9	
Malabuyoc	12	10	
Mandaue	17	8	
Minglanilla	2	1	
Opon	4	3	
Pinamungajan	56	29	
Samboan	3	2	
Santander	2	2	
San Fernando	3	3	
San Francisco	114	62	
San Remigio	3	1	
Santa Fé	116	59	
Talisay	47	23	
Toledo	1	1	
Total	722	419	58.03
Ilocos Sur:			
Candon	23	10	43.47

CHOLERA IN THE PROVINCES—Continued.

Towns and provinces.	Cases.	Deaths.	Mortality. Per ct.
Iloilo:			
Balasan	16	10	
Banate	9	7	
Barotac Nuevo	12	6	
Barotac Viejo	9	7	
Buenavista	3	1	
Cabatuan	1	1	
Dingle	5	2	
Dueñas	14	10	
Guimbal	64	44	
Iloilo	56	37	
Janiuay	19	14	
Jaro	18	11	
Jordan	2	1	
Lambunao	8	5	
Oton	13	10	
Passi	2	2	
Pototan	21	13	
Santa Barbara	2	1	
Tigbauan	31	23	
Total	305	205	67.21
Laguna:			
Cabuyao		1	
Calauan	1	1	
Nagcarlan	1		
Pila	4	5	
San Pablo	8	7	
Santa Cruz	5	4	
Total	19	18	94.73
Leyte:			
Baybay	6	5	
Capoocan	2	2	
Hilongos	14	14	
Hindang	3	3	
Inopacan	1	1	
Liloan	13	6	
Leyte	5	4	
Maasin	10	6	
Matalom	11	9	
Merida	20	9	
Ormoc	1	1	
Palompon	28	24	
Pintuyan	21	12	
Sogod	49	19	
San Isidro	8	5	
Villaba	4	4	
Total	196	124	63.26
Department of Mindanao and Sulu:			
Agusan:			
Bunauan	6	1	
Butuan	26	18	
Cabadbaran	6	2	
Gibung	1	1	
Simolao	6	1	
Talacogon	10	2	
Umayan	37	20	
Wawaojot	20	11	
Total	112	56	50.00
Davao:			
Santa Cruz	2	2	
Tagulaya	10	8	
Total	12	10	83.33
Lanao:			
Iligan	10	6	
Kalumbagan	3	3	
Kapatagan	25	9	
Lanao	8	4	
Total	46	22	47.82

CHOLERA IN THE PROVINCES—Continued.

Towns and provinces.	Cases.	Deaths.	Mor- tality.
Misamis:			<i>Per ct.</i>
Aloran	4	2	
Baliangao	9	5	
Balingasag	10	2	
Cagayan	139	80	
Gingoog	14	7	
Initao	26	16	
Jimenez	54	36	
Mambajao	4	3	
Misamis	349	218	
Oroquieta	28	13	
Plaridel	50	32	
Tagoloan	172	75	
Talisayan	2	2	
Total	861	491	57.02
Surigao:			
Gantilan	34	12	
Dapa	225	194	
Gigaquit	58	57	
Hinatuan	4	4	
Liangá	28	11	
Placer	2	2	
Surigao	146	74	
Total	497	354	71.22
Zamboanga:			
Ganelar	1	1	
Dapitan	39	34	
Dipolog	15	13	
Labangan	14	10	
Margosatubig	3	2	
Mercedes	2	2	
Santa Maria	1	1	
Zamboanga	32	29	
Total	107	92	85.98
Mindoro:			
Calapan	9	15	
Lubang	1		
Total	10	15	
Mountain:			
Tagudin		1	
Occidental Negros:			
Cadiz	37	24	
Escalante	96	53	
Sagay	10	8	
San Carlos	4	4	
Total	147	89	60.54
Oriental Negros:			
Ayuquitan	4	3	
Bais	21	10	
Dumaguete	8	7	
Guijulan	23	16	
Jirimalalud	8	5	
Larena	35	23	
Lazi	19	11	
Luzuriaga	1		
Manjuyod	15	8	
Maria	68	33	
San Juan	6	1	
Siquijor	17	6	
Tanjay	19	12	
Tayasan	6	3	
Total	250	138	55.20
Pampanga:			
Guagua	1	1	
Lubao	1	1	
Sexmoan	5	4	
Total	7	6	85.71

CHOLERA IN THE PROVINCES—Continued.

Towns and provinces.	Cases.	Deaths.	Mortality.
Pangasinan:			<i>Per ct.</i>
Alaminos	62	42	
Alcala	1	1	
Asingan	3	2	
Balincaguin	1	1	
Bani	6	4	
Bautista	7	5	
Bayambang	10	8	
Binalonan	11	9	
Binmaley	49	41	
Calasiao	73	65	
Dagupan	115	107	
Labrador	7	6	
Lingayen	95	73	
Malasiqui	7	6	
Manaoag	53	50	
Mangaldan	127	98	
Mapandan	22	21	
Pozorrubio	17	12	
Salasa	27	21	
San Carlos	3	3	
San Fabian	64	50	
San Jacinto	32	63	
San Manuel	1	1	
Santa Barbara	25	16	
Sison	11	8	
Sual	12	5	
Urdaneta	7	6	
Villasis	19	17	
Total	917	741	80.80
Rizal:			
Caloocan	9	3	
Las Piñas	7	3	
Makati	2		
Malabon	20	18	
Mariquina	1	1	
Navotas	20	7	
Parañaque	1	1	
Pasay	4	2	
Pasig	10	7	
Total	74	42	56.75
Samar:			
Calbayog	8	1	12.50
Sorsogon:			
Bulan	1		
Catagnan	9	5	
Dimasalang	9	2	
Gubat	8	4	
Masbate	124	60	
Milagros	69	26	
Mobo	3	7	
San Fernando	8	3	
Total	231	107	46.32
Tayabas:			
Candelaria	8	6	
Dolores	16	10	
Sariaya	4	4	
Tiaong	21	12	
Unisan	12	9	
Total	61	41	67.21
Union:			
Agoo	8	8	
Santo Tomas	20	14	
Total	28	22	78.57

CHOLERA IN THE PROVINCES—Continued.
SUMMARY, BY PROVINCES.

Provinces.	Cases.	Deaths.	Mortality.
			<i>Per ct.</i>
Albay	1	1	100.00
Antique	5	5	100.00
Bataan	38	32	84.21
Batangas	497	375	75.45
Bohol	1,382	1,010	73.08
Bulacan	77	52	67.53
Capiz	253	214	84.58
Cavite	345	250	72.46
Cebu	722	419	58.03
Ilocos Sur	23	10	43.47
Iloilo	305	205	67.21
Laguna	19	18	94.73
Leyte	196	124	63.26
Department of Mindanao and Sulu:			
Agusan	112	56	50.00
Davao	12	10	83.33
Lanao	46	22	47.82
Misamis	861	491	57.02
Surigao	497	354	71.22
Zamboanga	107	92	85.98
Mindoro	10	15	
Mountain		1	
Occidental Negros	147	89	60.54
Oriental Negros	250	138	55.20
Pampanga	7	6	85.71
Pangasinan	917	741	80.80
Rizal	74	42	56.75
Samar	8	1	12.50
Sorsogon	231	107	46.32
Tayabas	61	41	67.21
Union	28	22	78.57
Grand total	7,231	4,943	68.35

**REPORTS RECEIVED OF BLIND PERSONS LIVING IN THE VARIOUS PROVINCES
OF THE PHILIPPINE ISLANDS.**

Provinces.	Race.	Children.		Single.		Married.		Widowed.		Total.		Grand total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipinos			10	4	17	11	5	6	32	21	53
Agusan	do		1	7	4	3	1		1	10	7	17
Albay	do	14	8	66	58	43	11	7	21	130	98	228
Ambos Camarines	do	8	6	31	25	30	3	13	13	82	47	129
Antique	do	3	5	27	18	21	12	15	16	66	51	117
Bataan	do	4	2	22	6	5	1	4	4	35	13	48
Batanes	do	1	1	2	4	4	7	5	18	12	30	42
Batangas	do			31	23	23	10	11	15	69	48	117
Bohol	do	11	3	83	74	46	21	13	14	153	112	265
Bulacan	do		5	28	21	12	5	11	16	51	47	98
Cagayan	do	6		25	15	30	8	5	14	66	37	103
Capiz	do	2	2	34	28	37	21	16	37	89	88	177
Cavite	do	7	4	24	24	17	13	4	14	52	55	107
Cebu	do	10	1	85	69	43	24	16	15	154	109	263
Cotabato	do		1	1		1	1		1	2	3	5
Davao	do			5	3	5	2	1	3	11	8	19
Ilocos Norte	do	2	2	12	17	14	11	3	11	31	41	72
Ilocos Sur	do	10	9	41	30	29	14	13	27	93	80	173
Iloilo	do	6	2	46	42	41	12	16	29	109	85	194
Laguna	do	7	2	27	17	15	8	4	14	53	41	94
Lanao	do			2				3		6		6
Leyte	do	21	6	86	46	53	23	12	18	172	93	265
Mindoro	do					2	3	1	1	3	4	7
Misamis	do	7	6	40	14	29	14	11	8	87	42	129
Nueva Ecija	do	4	5	31	13	18	11	3	14	56	43	99
Nueva Viscaya	do			5	1	1	1		1	6	3	9
Occidental Negros	do	16	5	48	38	21	9	21	11	106	63	169
Oriental Negros	do	5	2	49	25	21	10	10	14	85	51	136
Palawan	do	2	4	5	4	3	2	5	5	15	15	30
Pampanga	do	13	6	68	42	68	24	27	26	176	98	274
Pangasinan	do	24	19	68	37	57	40	14	36	163	132	295
Rizal	do	1	4	23	25	38	15	15	17	77	61	138
Romblon	do	3	1	13	17	18	1	6	2	40	21	61
Samar	do	7	5	67	29	23	13	11	10	108	57	165
Sorsogon	do	11	2	53	28	16	6	3	3	83	39	122
Surigao	do	1		13	4	11	1	4	2	29	7	36
Tarlac	do	7	4	11	13	22	11	8	14	48	42	90
Tayabas	do	11	9	38	18	20	8	7	8	76	43	119
Union	do	4	2	14	10	13	7	7	12	38	31	69
Zambales	do		2	14	8	11	4	8	14	33	28	61
Zamboanga	do	1		4				1	1	6	1	7
Total		233	136	1,259	854	882	399	339	506	2,713	1,895	4,608

**REPORTS RECEIVED OF INSANE PERSONS LIVING IN THE VARIOUS PROVINCES
OF THE PHILIPPINE ISLANDS AND IN HOSPITAL.**

Provinces.	Race.	Children.		Single.		Married.		Widowed.		Total.		Grand total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipino	3	1	27	15	15	8	2	6	47	30	77
Agusan	do			3		1	1	3	2	7	3	10
Albay	do			46	31	5	17	3	6	54	54	108
Ambos Camarines	do			40	23	11	6	4	8	55	37	92
Antique	do			45	20	12	12	1	5	58	37	95
Bataan	do			10	2	4	5	4	3	18	10	28
Batanes	do			16	7	1		1	1	18	8	26
Batangas	do			44	24	15	9	4	8	63	41	104
Bohol	do	4	4	194	139	48	30	8	9	254	182	436
Bulacan	do		1	32	14	7	13	3	9	42	37	79
Cagayan	do	1		18	10	8	11	4	2	31	23	54
Capiz	do			27	22	14	22	4	16	45	60	105
Cavite	do	1		24	17	10	10	2	11	37	38	75
Cebu	do	6	1	171	68	20	11	7	7	204	87	291
Cotabato	do						1				1	1
Davao	do			2		4			4	6	4	10
Ilocos Norte	do		1	39	26	16	5		3	55	35	90
Ilocos Sur	do			61	37	27	9	8	7	96	53	149
Iloilo	do	1		56	41	22	19	6	11	85	71	156
Laguna	do			21	13	9	12	4	2	34	27	61
Lanao	do					4		2		11		11
Leyte	do	4	1	89	42	21	14	6	7	120	64	184
Misamis	do	3		16	29	15	5	8	7	87	41	128
Nueva Ecija	do			17	13	4	3		4	21	20	41
Nueva Viscaya	do			2	1	1				3	1	4
Occidental Negros	do			32	13	14	11	8	9	54	33	87
Oriental Negros	do			95	34	15	10	7	3	117	47	164
Palawan	do	4	5	15	11		2	2	3	21	21	42
Pampanga	do	1		16	13	13	10	2	7	32	30	62
Pangasinan	do	3	4	69	30	62	32	16	28	150	94	244
Rizal	do			18	12	9	15	3	2	30	29	59
Romblon	do	2		5	5	6	5	3	1	16	11	27
Samar	do	1	2	53	26	7	11	6	7	67	46	113
Sorsogon	do	2	1	34	18	10	7	1	7	47	33	80
San Lázaro Hos- pital	(a)	2	1	130	32	134	46	13	20	279	99	378
Surigao	Filipino	3		4	3	4	4		1	11	8	19
Tarlac	do			10	3	6	1		1	16	5	21
Tayabas	do	5	8	95	70	15	18	9	4	124	100	224
Union	do			23	16	15	10	8	3	46	29	75
Zambales	do	1		13	8	6	7		2	20	17	37
Zamboanga	do			1	3	3	1			4	4	8
Total		47	30	1,663	891	613	413	162	236	2,485	1,570	4,055

^a Americans, 7; Filipinos, 348; Other Europeans, 16; Chinese, 3; All others, 4, total, 378.

REPORT OF SERA.

	Remain- ing at the begin- ning of the year.	Received from the Bureau of Science.	Total to be ac- counted for.	Issued.	Remain- ing at end of the year.
Anticholera serum (units)		60	60	60	
Antidiphtheric serum (units)	574,000	2,000,000	2,574,000	1,269,000	1,305,000
Antidysenteric serum (c. c.)		580	580	580	
Antitetanic serum (units)		1,511,000	1,511,000	1,511,000	
Antityphoid vaccine (ampoules)		103	103	103	
Normal horse serum (ampoules)		12	12	12	
Staphylococcus vaccine (ampoules)		2	2	2	

AMOUNT OF VACCINE VIRUS DISTRIBUTED BY THE PHILIPPINE HEALTH SERVICE.

	Units.
Amount on hand January 1, 1918	11,250
Received from the Bureau of Science	4,289,250
Received from Saigon	700,000
Received from Shanghai	150,000
Found at the Stations	6,000
Total to be accounted for	5,156,500
Distributed as per itemized statement	5,135,400
Remaining on hand December 31, 1918	21,100

PLACES AT WHICH VACCINE VIRUS WAS DISTRIBUTED.

Provinces:	Units.
Albay	90,500
Ambos Camarines	73,660
Antique	10,960
Baguio Hospital	7,000
Bataan	52,000
Batanes	5,000
Batangas	291,740
Bohol	15,000
Bulacan	153,800
Cagayan	50,440
Capiz	8,200
Cavite	130,400
Cebu	746,100
Culion Leper Colony	24,000
Cuyo Hospital	1,000
Ilocos Norte	141,360
Ilocos Sur	80,770
Iloilo	258,980
Isabela	25,980
Laguna	301,800
Leyte	175,000
Masbate	500
Mindanao	150,480
Mindoro	46,920
Mountain	51,980
Nueva Ecija	112,000
Nueva Vizcaya	12,960
Occidental Negros	11,000
Oriental Negros	2,000
Palawan	8,500
Pampanga	269,910
Pangasinan	239,600
Rizal	353,870
Romblon	50,780
Samar	45,080
Sorsogon	56,000
Surigao	6,980
Tarlac	41,920
Tayabas	244,160
Union	72,010
Zambales	115,450
Total	4,535,790
Manila:	
Health districts	558,520
Other institutions	41,090
Total	599,610
Grand total	5,135,400

VACCINATIONS, CALENDAR YEAR 1918.

[Closed March 25, 1919.]

	Total vac- cinations.	Total in- spections.	Positive.	Negative.
City of Manila:				
Health district No. 1	43,566	7,570	3,118	4,452
Health district No. 2	119,354	38,360	21,091	17,269
Health district No. 4	69,715	31,586	14,803	16,783
Health district No. 5	121,639	29,598	14,186	15,412
Health district No. 6	60,136	47,550	16,381	31,169
Total	414,410	154,664	69,579	85,085
Provinces:				
Albay	64,749	51,041	36,211	14,830
Ambos Camarines	71,713	57,863	37,746	20,117
Antique	23,097	22,015	13,187	8,828
Bataan	48,322	31,872	15,755	16,117
Batangas	170,630	76,692	49,898	26,794
Bohol	75,095	67,664	39,075	28,589
Bulacan	123,284	72,162	49,015	23,147
Cagayan	46,235	37,926	23,193	14,733
Capiz	17,507	16,088	11,215	4,873
Catanduanes	7,177	5,390	3,141	2,249
Cavite	81,171	72,338	43,131	29,207
Cebu	349,331	294,288	184,328	109,960
Ilocos Norte	86,319	77,224	39,656	37,568
Ilocos Sur	70,739	64,036	36,942	27,094
Iloilo	166,562	102,513	69,295	33,218
Isabela	9,366	8,749	2,417	6,332
Laguna	323,912	211,343	136,036	75,307
Leyte	168,447	79,308	50,102	29,206
Mindoro	29,638	21,328	13,474	7,854
Misamis	17,653	13,586	6,557	7,229
Mountain	21,397	16,318	7,209	9,109
Nueva Ecija	67,636	54,470	35,733	18,737
Nueva Vizcaya	15,142	14,573	10,444	4,129
Occidental Negros	48,887	43,748	25,462	18,286
Oriental Negros	15,518	14,948	9,722	5,226
Palawan	6,512	3,741	2,337	1,404
Pampanga	299,685	208,726	136,711	73,015
Pangasinan	215,997	192,617	132,115	60,502
Rizal	237,652	185,272	117,249	68,023
Romblon	14,788	9,469	5,439	4,030
Samar	24,526	13,776	8,397	5,379
Sorsogon	34,971	23,373	14,383	8,990
Tarlac	35,163	33,428	21,471	11,957
Tayabas	195,939	146,704	99,998	46,706
Union	62,102	51,058	26,549	24,509
Zambales	57,691	46,938	28,118	18,820
Total	3,304,553	2,442,585	1,540,511	902,074
Grand total	3,718,963	2,597,249	1,610,090	987,159

MORTALITY AMONG GOVERNMENT EMPLOYEES.

	Amer- icans.	Filipinos.
Average number of employees	1,008	9,980
Deaths reported:		
From illness	11	75
From violence	1	1
Total	12	76
Death from illness:		
Average years of service	8.05	7.58
Average age at death	36.05	33.49
Annual deathrate per thousand	10.91	7.51
Deaths from violence:		
Average years of service	4.17	5.24
Average age at death	25.06	23.00
Annual deathrate per thousand .....	.99	.10
Total deaths:		
Average years of service	7.44	7.45
Average age at death	34.76	33.10
Annual deathrate per thousand	11.90	7.61
Both nationalities:		
Population		10,988
Number of deaths		88
Average years of service		7.91
Average age at death		33.87
Annual deathrate per thousand		8.00

By sexes: male 80, female 8.

BAGUIO HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever		1		1	
4. Malaria		47		46	1
6. Measles		34		34	
7. Scarlet fever		3		3	
8. Whooping cough		11		11	
9. Diphtheria and croup		4		4	
10. Influenza		146	1	142	3
14. Dysentery		26	1	24	1
19. Other epidemic diseases		40		40	
20. Purulent infection and septichæmia		3		3	
24. Tetanus		1		1	
28. Tuberculosis of the lungs	9	100	2	103	4
30. Tuberculous meningitis		1	1		
34. Tuberculosis of other organs		4		4	
37b. Syphilis, secondary		3		2	1
38b. Gonococcus infection		10		10	
47. Acute articular rheumatism		17		17	
50. Diabetes		1		1	
54. Anæmia, chlorosis		4		4	
55. Other general diseases		2		2	
56. Alcoholism (acute or chronic)		1		1	
66. Paralysis without specified cause		4	1	3	
68. Other forms of mental alienation		1		1	
71. Convulsions of infants		5	1	4	
73b. Neuralgia and neuritis		3		3	
74. Other diseases of the nervous system		1		1	
75a. Follicular conjunctivitis		5		5	
75b. Trachoma		3		3	
75c. Other diseases of the eyes and their annexa		19		19	
76. Diseases of the ears		4		4	
81. Diseases of the arteries, atheroma, aneurysm, etc		3		3	
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		1			1
86. Diseases of the nasal fossæ		1		1	
87. Diseases of the larynx		3		3	
89. Acute bronchitis	1	98		97	2
91. Bronchopneumonia		12	5	6	1
92. Pneumonia		46	20	26	
93. Pleurisy		8		8	
96. Asthma		4		4	
99a. Diseases of the teeth and gums		1		1	
99b. Other diseases of the mouth and annexa		21		21	
102. Ulcer of the stomach		6		6	
103. Other diseases of the stomach (cancer excepted)		50	1	48	1
104. Diarrhœa and enteritis, under 2 years	1	10	2	9	
105. Diarrhœa and enteritis, two years and over		19		19	
105a. Due to alcoholism		1		1	
107. Intestinal parasites		3		2	1
108. Appendicitis and typhlitis		2		2	
109. Hernia, intestinal obstruction		1		1	
110a. Diseases of the anus and fæcal fistula		3		3	
110b. Other diseases of the intestines		5		5	
112. Hydatid tumor of the liver		2		2	
116. Diseases of the spleen		2		2	
119. Acute nephritis		8	1	7	
120. Bright's disease	1	3	1	3	
122. Other diseases of the kidneys and annexa		2		2	
124. Diseases of the bladder		1		1	
125. Diseases of the urethra, urinary abscess, etc		1		1	
126. Diseases of the prostate		2		2	
127. Nonvenereal diseases of the male genital organs		10		10	
130a. Metritis		2		2	
130b. Other diseases of the uterus		8		8	
131. Cysts and other tumors of the ovary		3	1	2	
132. Salpingitis and other diseases of the female genital organs		2		2	
134a. Normal labor		57		56	1
134b. Accidents of pregnancy		20		20	
136. Other accidents of labor		5		5	
142. Gangrene		11		11	
143. Furuncle	1	11		12	
144. Acute abscess		9		8	1
145b. Scabies		6		6	
145c. Other diseases of the skin and annexa		4		4	
151a. Nursing discharged from hospital without disease		57		56	1
151-1. Premature birth (not stillborn)		1	1		
151-2. Congenital debility		1	1		

BAGUIO HOSPITAL—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
164. Poisoning by food		5	2	3	
167. Burns (conflagration excepted)	1	5		6	
170. Traumatism by firearms	1	7		8	
171. Traumatism by cutting or piercing instruments		33		33	
172. Traumatism by fall		4		4	
173. Traumatism in mines and quarries		4		4	
174. Traumatism by machines		1		1	
175. Traumatism by other crushing (vehicles, railways, land-slides, etc.)		11		11	
176. Injuries by animals		1		1	
185b. Sprains		5		5	
185c. Fractures (cause not specified)		12		12	
199b. No disease, feigned disease		9		9	
Tot #1	15	1, 127	42	1, 081	19

Number of patients treated in the outdoor department at the Baguio Hospital, 4,498.

BAGUIO HOSPITAL.

TABLE OF DEATHS.

Date.	Nationality.	Adult or child.	Sex.	Causes of death.
1918.				
January 25	Filipino	Adult	M.	Mitral regurgitatis. Cardiac dilatation.
February 7	do	do	M.	Lobar pneumonia.
13	do	do	F.	Ovarian cyst.
15	do	do	M.	Pneumonia.
25	do	do	M.	Nephritis, acute.
March 1	do	Child	M.	Meningitis, tubercular.
April 1	do	Adult	M.	Transverse, traumatic. Myolitis complicated by hypostatic pneumonia.
4	do	Child	M.	Acute gastroenteritis.
14	do	do	F.	Ptomaine poisoning.
21	do	do	M.	Pneumonia.
May 9	Chinese	do	M.	Bronchopneumonia.
22	Filipino	do	M.	Acute gastro enteritis.
June 23	do	do	F.	Pneumonia.
25	do	do	M.	Bacillary dysentery.
25	do	Adult	F.	Grippe complicated with bronchopneumonia.
July 2	do	Child	M.	Acute gastroenteritis.
17	do	Adult	M.	Acute tubercular pulmonary.
28	do	Child	F.	Infantile Convulsion.
August 2	do	do	F.	Acute ptomaine poisoning.
5	do	Adult	M.	Pneumonia.
5	do	Child	M.	Pneumonia.
September 28	do	Adult	F.	Rupture of sac ectopic gestation.
October 1	do	do	M.	Cancer of the stomach.
28	do	Child	M.	Bronchopneumonia.
November 18	do	do	F.	Pneumonia.
19	do	Adult	M.	Do.
20	do	do	M.	Pneumonia following grippe.
20	do	do	M.	Bronchopneumonia following grippe.
22	do	do	M.	Do.
23	do	do	M.	Pneumonia following grippe.
25	do	do	M.	Do.
25	do	do	M.	Do.
26	do	do	M.	Pulmonary tuberculosis.
27	do	do	F.	Pneumonia following grippe.
28	do	do	M.	Do.
December 2	do	do	F.	Influenza; pneumonia, lobar.
2	do	do	M.	Pneumonia following grippe.
6	do	Child	M.	Congenital debility.
6	do	Adult	M.	Influenza; pneumonia, lobar.
8	do	do	M.	Pneumonia following grippe.
9	do	do	M.	Bronchopneumonia.
10	do	do	F.	Do.
13	do	do	M.	Lobar pneumonia following grippe.

BAYOMBONG HOSPITAL.
HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
4. Malaria	2	80		82	
4a. Malarial cachexia	1	7	1	7	
5. Smallpox		2		2	
9. Measles		1	1		
10. Influenza		16	1	15	
14. Dysentery		4		4	
19. Other epidemic diseases		6		6	
20. Purulent infection and septichæmia		1		1	
23. Rabies		4		4	
27. Beriberi		4	1	3	
28. Tuberculosis of the lungs		3		3	
28b. Gonococcus infection		1		1	
47. Acute articular rheumatism		2		2	
48. Chronic rheumatism and gout		4		4	
54. Anæmia, chlorosis		3		3	
61. Simple meningitis		6		6	
71. Convulsions of infants		2		2	
75c. Other diseases of the eyes and their annexa		3		3	
76. Diseases of the ears		1		1	
86. Diseases of the nasal fossæ		1		1	
89. Acute bronchitis		5		5	
92. Pneumonia		2	1	1	
93. Pleurisy		1		1	
100. Diseases of the pharynx		3		3	
102. Ulcer of the stomach		1	1		
103. Other diseases of the stomach (cancer excepted)		9		9	
105. Diarrhœa and enteritis (2 years and over)		1		1	
107. Intestinal parasites		8		8	
109. Hernia, intestinal obstruction		1	1		
118. Other diseases of the digestive system (cancer and tuberculosis excepted)	1	2		3	
119. Acute nephritis		1	1		
124. Diseases of the bladder		1		1	
132. Salpingitis and other diseases of the female genital organs	1	2		3	
137. Puerperal septichæmia		1		1	
143. Furuncle		4		4	
144. Acute abscess		5		5	
145b. Scabies		18		18	
145c. Other diseases of the skin and annexa		1		1	
171. Traumatism by cutting or piercing instruments	1	8		9	
186. Other external violence		2		2	
189a. Causes of death not specified or illdefined		1		1	
Total	6	228	8	226	0

BONTOC HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever		22		22	
4. Malaria		15	1	14	
6. Measles		10		9	1
10. Influenza		241	6	221	14
14. Dysentery		11	1	10	
17. Leprosy	3	11		14	
19. Other epidemic diseases		40		40	
20. Purulent infection and septichæmia		35		32	
22. Antrax		1		1	
27. Beriberi		3		3	
28. Tuberculosis of the lungs		14	1	13	
37b. Syphilis, secondary		1		1	
38b. Gonococcus infection		6		6	
47. Acute articular rheumatism		4		4	
54. Anæmia, chlorosis		4		4	
61. Simple meningitis		2		2	
73b. Neuralgia and neuritis		5		5	
74. Other diseases of the nervous system		2		2	
66. Paralysis without specified cause		1		1	
75a. Follicular conjunctivitis		7		7	
75c. Other diseases of the eyes and their annexa		4		3	1
76. Diseases of the ears		5		4	1
84. Diseases of the lymphatic system (lymphangitis, etc.)		1		1	
87. Diseases of the larynx		3		3	
88. Diseases of the thyroid body		3		3	
89. Acute bronchitis		15		15	
90. Chronic bronchitis		6		6	
91. Bronchopneumonia		5		5	
98. Other diseases of the respiratory system (tuberculosis excepted)	2			2	
99b. Other diseases of the mouth and annexa		4		4	
103. Other diseases of the stomach (cancer excepted)		12		12	
104. Diarrhœa and enteritis (under 2 years)		3		3	
105. Diarrhœa and enteritis (2 years and over)		21		20	1
106. Ankylostomiasis		5		5	
107. Intestinal parasites		28	1	27	
110. Other diseases of the intestine		2		2	
113. Cirrhosis of the liver		1		1	
115. Other diseases of the liver		3		3	
120. Bright's disease		4		4	
123. Calculi of the urinary passages		3		1	2
127. Nonvenereal diseases of the male genital organs		1		1	
130. Other diseases of the uterus		5		5	
134. Accidents of pregnancy		4		3	1
140. Following childbirth (not otherwise defined)		17	1	15	1
143. Furuncle		4		4	
144. Acute abscess	2			2	
145a. Trichophytosis (tineas and peladas)	18	25		43	
145b. Scabies	1			1	
145c. Other diseases of the skin and annexa	2	52		53	1
146. Diseases of the bones (tuberculosis excepted)		3		3	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		1		1	
151. Congenital debility, icterus, and sclerema		1	1		
164. Poisoning by food		1		1	
167. Burns (conflagration excepted)		5	3	2	
171. Traumatism by cutting or piercing instruments		12		11	1
176. Injuries by animals		3		3	
185a. Dislocations		3		3	
185c. Fractures (cause not specified)		2		2	
186. Other external violence		9		8	1
189a. Cause of death not specified or illdefined		2		2	
Total	28	713	15	698	28

Patients treated in the outdoor department at the Bontoc Hospital, 5,385.

Cases treated in the outdoor department at the Bontoc Hospital, 2,068.

Cases treated in the provincial health stations by medical officers or assistant sanitary inspectors, 30,787.

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BONTOC HOSPITAL.**LABORATORY EXAMINATIONS.**

	Specimen.	Number.
Blood		15
Faeces		87
Nose discharge		1
Pus		2
Sputum		18
Urine		25
Urethral discharge		1
Total		149

MISCELLANEOUS.

Patients admitted	713
Patients remaining from last year	28
Hospital days	9,239
Average hospital days per patient	13.22
Daily average per patient	25.33
Deaths	15

CHINESE HOSPITAL-SICK REPORT.

[Dr. Tee Kan Kee, Physician in Charge.]

In hospital at last year	43
Received during the year	658
Discharged	512
Died	147
Remaining in hospital at end of the year	42

CULION LEPER COLONY.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Remaining at last report	4	---	2	---	2,858	1,604	5	---	8	4	4,485
Admitted	3	---	---	---	661	302	3	---	4	---	973
Readmitted	1	---	---	---	21	5	---	---	---	---	27
Born	---	---	---	---	47	28	---	---	---	---	75
Died	---	---	2	---	558	271	---	---	1	2	834
Discharged	1	---	---	---	6	5	---	---	---	---	12
Escaped	---	---	---	---	21	1	---	---	---	---	22
Remaining	7	---	---	---	3,002	1,662	8	---	11	2	4,692

CUYO HOSPITAL.
HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
4a. Malarial cachexia		23	1	22	
10. Influenza		12		12	
14. Dysentery		3		3	
18. Erysipelas		1		1	
21. Glanders		1	1	1	
28. Tuberculosis of the lungs	2	5		7	
44. Cancer and other malignant tumors of the skin		1		1	
47. Acute articular rheumatism		4		4	
48. Chronic rheumatism and gout		1		1	
65. Softening of the brain		2		2	
68. Other forms of mental alienation		1		1	
74. Other diseases of the nervous system		2		2	
75a. Follicular conjunctivitis		1		1	
75c. Other diseases of the eyes and their annexa		1		1	
76. Diseases of the ears		1		1	
86. Diseases of the nasal fossae		1		1	
89. Acute bronchitis		2		2	
91. Bronchopneumonia		1		1	
92. Pneumonia		2		2	
96. Asthma		1		1	
103. Other diseases of the stomach (cancer excepted)		17		17	
106. Ankylostomiasis		9		9	
107. Intestinal parasites		11		11	
108. Appendicitis and typhlitis		3		3	
109. Hernia, intestinal obstruction		1		1	
110b. Other diseases of the intestines		1		1	
113a. Due to alcoholism		1		1	
116. Diseases of the spleen		1		1	
118. Other diseases of the digestive system (cancer and tuberculosis excepted)		1		1	
119. Acute nephritis		3		3	
128. Uterine hæmorrhage (nonpuerperal)		1			1
130b. Other diseases of the uterus		4		4	
134a. Normal labor		2		2	
136. Other accidents of labor		1		1	
145. S. abies		3		3	
145c. Other diseases of the skin and annexa		2		2	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		2		2	
152. Other diseases peculiar to early infancy		2		2	
153. Lack of care		1		1	
165a. Venomous bites and stings		3		3	
166. Conflagration		1		1	
171. Traumatism by cutting or piercing instruments		1			1
186. Other external violence		1		1	
Total	2	138	2	136	2

Number of patients treated during the year	4,198
Number of surgical dressings	2,114
Number of minor operations performed	162
Number of prescriptions filled	1,635

SAN LAZARO HOSPITAL.
INSANE DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital at last year	6		13	2	302	105	6		3		437
Admitted	30		4	1	164	71	45		10	1	326
Discharged	25		2		59	35	47		5		173
Transferred	2		2		46	30	1		1		82
Escaped					8						8
Died	2				100	16			4		122
Remaining	7		13	3	253	95	3		3	1	378

SAN LAZARO HOSPITAL—Continued.

LEPER DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital at last year					96	46	2				144
Admitted	4				202	85	10	1			302
Discharged					25	9	7	1			42
Transferred	4				167	87	2				260
Escaped					32	11	2				45
Died					8	1	1				10
Remaining					66	23					89

OLD FOLK'S HOME DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year					14	17			1		32
Admitted	4				42	32			1		79
Discharged	2				9	10					21
Transferred					8	4			1		13
Escaped											
Died	2				19	14					35
Remaining					20	21			1		42

Death rate, 31.53 per cent.

TUBERCULOSIS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year			1		58	26	1		1		87
Admitted	6		5		419	207	3	1	9		650
Discharged	2		2		260	131	3	1	5		404
Transferred	1		2		1	2					6
Escaped					2						2
Died	2		1		179	72	1		2		257
Remaining	1		1		35	28			3		68

Death rate, 15.99 per cent.

OBSERVATION DEPARTMENT.

[illegible]

SAN LAZARO HOSPITAL—Continued.

REMARKS.

Discharged:

- 2 Americans male under observation for smallpox and plague.
- 2 Americans male not smallpox.
- 1 American male unknown.
- 3 Filipinos male unknown.
- 4 Filipinos male not smallpox.
- 1 Filipino male not measles.
- 1 Filipino male not varioloid.
- 2 Filipinos female not measles.
- 1 Filipino female not varioloid.
- 1 Filipino male under observation for bubonic plague.

Transferred:

- 1 American male to smallpox department.
- 1 American female to varioloid department.
- 1 American female to smallpox department.
- 1 European male to smallpox department.
- 4 Filipinos male to smallpox department.
- 1 Filipino female to measles department.
- 1 Filipino female to smallpox department.
- 1 Filipino male to measles department.
- 1 Filipino male to grippe department.
- 1 Chinese male to smallpox department.
- 1 Other male to smallpox department.

Died:

- 1 Filipino male due to bilateral empyema.
- 1 Filipino male due to lobar pneumonia.

CHOLERA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year						2					2
Admitted	9	1	2	1	254	128	2		4		401
Discharged	7	1		1	159	89			4		261
Transferred	1		1		16	9	1				28
Escaped					1						1
Died	1		1		75	29	1				107
Remaining					3	3					6

Death rate 26.55 per cent.

REMARKS: Of the above 403 cases, admitted, 38 were cholera vibrio carriers.

SMALLPOX DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year											
Admitted	25	6	4	2	571	452	5	3	9	2	1,079
Discharged	19	3	3	1	266	232	3	1	4	1	533
Transferred	1				8	2	1		2		14
Escaped											
Died	4	3	1		296	217	1	2	3	1	528
Remaining	1			1	1	1					4

Death rate, 48.93 per cent.

SAN LAZARO HOSPITAL—Continued.

VARIOLOID DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year											
Admitted	18	15	2	1	449	347	6	1	16	5	860
Discharged	16	14	2	1	409	317	4		13	4	780
Transferred	2	1			32	20			2		57
Escaped					3	4	2	1	1	1	12
Died					5	6					11
Remaining											

Death rate 1.27 per cent.

VARICELLA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year											
Admitted		1	2		2	4	1		1	2	20
Discharged			1		2	2			1	2	14
Transferred		1	1		1	2	1				6
Escaped											
Died											
Remaining											

REMARKS.

Four cases were transferred to varioloid department.

Two cases were transferred to smallpox department.

Death rate, 0 per cent.

MEASLES DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year	1				3						4
Admitted	9	11	2	3	292	136	1		2	5	461
Discharged	10	11	2	3	222	129	1		2	5	385
Transferred					5	5					10
Escaped											
Died					4	2					6
Remaining					64						64

One Filipino male admitted as measles with numps.

One Filipino female, admitted as measles with tonsillitis.

Death rate, 1.3 per cent.

SAN LAZARO HOSPITAL—Continued.

DIPHTHERIA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year											
Admitted	8	1	2	1	41	22					75
Discharged	8	1		1	32	17					59
Transferred			1								1
Escaped											
Died			1		9	5					15
Remaining											

Death rate, 20 per cent.

TYPHOID AND PARATYPHOID DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year					5	1					6
Admitted	1				27	14					42
Discharged					21	13					34
Transferred					4	1					5
Escaped											
Died	1				7	1					9
Remaining											

REMARKS.

Three cases were paratyphoid fever, being discharged, 2, and transferred 1.

One case of typhoid fever, was discharged as grippe fever.

Death rate, 25 per cent.

DYSENTERY DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year					1						1
Admitted	4		1		100	60	1		3		169
Discharged	3		1		73	40			2		119
Transferred					5	5					10
Escaped											
Died	1				22	15	1		1		40
Remaining					1						1

Death rate, 23.52 per cent.

[illegible]

VENEREAL DISEASES.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.
In hospital on last year											
Admitted					1						1
Discharged					8	40					48
Transferred					6	39					45
Escaped					1	1					2
Died											
Remaining					1						1
					1						1

One Filipino female, admitted as gonorrheal ophthalmia.

One Filipino female, admitted as gonorrheal ophthalmia.

Two Filipinos male, were admitted as gonorrheal urethritis.

Thirty-nine Filipinos female, were admitted as gonorrheal urethritis and cervicitis.

One Filipino male, died of gonorrheal ophthalmia.

One Filipino male, was transferred to insane department as dementia praecox.

One Filipino female, was transferred to cholera department as cholera vibrio carrier.

Death rate, 2.04 per cent.

GRIPPE DEPARTMENT.

[illegible]

SAN LAZARO HOSPITAL—Continued.

MUMPS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital on last year					4	1					5
Admitted					136	26					162
Discharged					115	27					142
Transferred					2						2
Escaped											
Died					2						2
Remaining					21						21

REMARKS.

Two cases died due to lobar pneumonia.
Death rate, 1.19 per cent.

MISCELLANEOUS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Remaining on last year	1				4						5
Admitted	1				18	17	1				37
Discharged					16	13	1				30
Transferred	1				3	3					7
Died					3	1					4
Remaining	1										1

REMARKS.

In this department were included the following cases:

Gastro-enteritis	4	Scabies	15
Enteritis	1	Cerebral hæmorrhage	1
Gastritis	1	Arthritis deformed	1
Entero-colitis	1	Orchitis	1
Ring-worm	1	Child-birth	2
Diarrhœa	1	Yaws	1
Trichiuris	1	Pneumonia	5
Ankylostomiasis	1	Puerperium	1
Boil	1	Mastitis	1
Whooping-cough	2		

Died: 3 cases due to lobar pneumonia. Died: 1 case due to puerperal insanity.

REPORT OF SPECIMEN FORWARDED TO THE BUREAU OF SCIENCE FOR LABORATORY EXAMINATIONS DURING THE YEAR 1918.

	Specimen.	Number.
Blood		74
Diphtheria		427
Fæces		3,988
Conococcus		148
Sputum		469
Urine		5
Total		5,106

SAN LAZARO HOSPITAL.
MORGUE AND CREMATORY DEPARTMENT.

Disposition.	Number of bodies.
Remaining from last year.....	1
Received:	
Abdominal tuberculosis.....	3
Acute bronchitis.....	1
Acute miliary tuberculosis.....	3
Acute nephritis.....	1
Alcoholism (acute or chronic).....	1
Beriberi.....	2
Bronchopneumonia.....	15
Cancer and other malignant tumors of the breast.....	1
Cerebral hæmorrhage, apoplexy.....	2
Cholera.....	126
Probable cholera.....	35
Congenital debility.....	2
Convulsions of infants.....	1
Diarrhœa and enteritis.....	4
Diphtheria.....	14
Probable diphtheria.....	1
Diseases of the arteries, atheroma, aneurysms, etc.....	2
Diseases of the mouth and annexa.....	1
Dysentery.....	49
Following childbirth (not otherwise defined).....	1
Gangrene.....	1
Hernia, intestinal obstruction.....	1
Influenza.....	3
Leprosy.....	9
Malaria.....	3
Measles.....	6
Other diseases of the heart.....	5
Other diseases of the nervous system.....	1
Other diseases of the spinal cord.....	1
Other forms of mental alienation.....	59
Pneumonia.....	33
Senility.....	35
Simple meningitis.....	2
Smallpox.....	984
Probable smallpox.....	4
Stillbirths.....	3
Syphilis.....	1
Tetanus.....	34
Tuberculosis of other organs.....	1
Tuberculosis of the lungs.....	293
Typhoid fever.....	9
Varioloid.....	11
Other diseases.....	121
Total.....	1,886
Dropped:	
Buried by Bureau of Prisons.....	13
Buried by chinese cemetery.....	9
Buried by city.....	750
Buried by family.....	872
Cremated.....	123
Turned over to army morgue.....	2
Turned over to city morgue.....	1
Turned over to family.....	113
Remaining at end of the year.....	8
Total.....	1,886

Number of autopsies held, 316.

PRISON SANITATION.
BILIBID PRISON REPORT OF SICK.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
1. Typhoid fever		1			1	
4. Malaria		27	3		24	
5. Smallpox		5		3		2
6. Measles		17			17	
8. Whooping cough		2			2	
10. Influenza		777		13	756	8
Cholera vibrio carriers		1			1	
14. Dysentery	1	152	2		150	1
17. Leprosy		3		3		
19. Other epidemic diseases	9	210			217	2
20. Purulent infection and septichæmia		30			29	1
27. Beriberi		12			9	3
28. Tuberculosis of the lungs	44	135	118		18	43
31. Abdominal tuberculosis		16	10		6	
33. White swellings		1				1
34. Tuberculosis of other organs	2	9	2		9	
35. Disseminated tuberculosis		1	1			
37a. Syphilis, primary		6			5	1
37b. Syphilis, secondary		14			14	
37c. Syphilis, tertiary	3	29			30	2
38a. Soft chancre		7			6	1
38b. Gonococcus infection	6	28			33	1
46. Other tumors (tumors of the female genital organs excepted)		18			18	
47. Acute articular rheumatism	2	50			51	1
48. Chronic rheumatism and gout	5	30			32	3
55. Other general diseases		53			53	
59. Other chronic poisonings		12			10	2
61. Simple meningitis		1	1			
64. Cerebral hæmorrhage, apoplexy		2	1			1
68. Other forms of mental alienation		6		6		
69. Epilepsy		2			2	
73a. Hysteria		2			2	
73b. Neuralgia and neuritis		1			1	
75b. Trachoma		112			112	
75c. Diseases of the eyes and their annexa	4	134			134	4
76. Diseases of the ears		7			7	
79. Organic diseases of the heart		6	3		3	
81. Diseases of the arteries, atheroma, aneurysm, etc.	1	1	1		1	
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)	2	25			24	3
84. Diseases of the lymphatic system (lymphangitis, etc.)		5			5	
85. Hæmorrhage; other diseases of the circulatory system		3			3	
86. Diseases of the nasal fossæ		11			11	
87. Diseases of larynx		3			3	
90. Chronic bronchitis		1			1	
91. Bronchopneumonia		5	2		3	
92. Pneumonia	4	90	36		55	3
93. Pleurisy	1	15	1	1	10	4
94. Pulmonary congestion, pulmonary apoplexy		1	1			
95. Gangrene of the lungs		1	1			
96. Asthma	2	29			30	1
98. Other diseases of the respiratory system (tuberculosis excepted)		27			27	
99a. Diseases of the teeth and gums		29			29	
99b. Other diseases of the mouth and annexa		6			6	
100. Diseases of the pharynx		4			3	1
103. Other diseases of the stomach (cancer excepted)		67			67	
105. Diarrhœa and enteritis (2 years and over)		89			89	
106. Ankylostomiasis	2	805			793	14
107. Intestinal parasites	4	1175			1168	11
108. Appendicitis and typhlitis		3	1		2	
109. Hernia, intestinal obstruction	1	34			33	2
110a. Diseases of the anus and fæcal fistulas		25			25	
110b. Other diseases of the intestine		17			17	
114. Biliary calculi		1			1	
115. Other diseases of the liver		5	1		4	
116. Diseases of the spleen		1	1			
119. Acute nephritis		1	1			
120. Bright's disease	1	9	4		6	
122. Other diseases of the kidneys and annexa		1			1	
123. Calculi of the urinary passages		1			1	
124. Diseases of the bladder		1			1	
125. Diseases of the urethra, urinary abscess, etc.		2			2	
127. Nonvenereal diseases of the male genital organs	3	38			39	2

PRISON SANITATION—Continued.

BILIBID PRISON REPORT OF SICK—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
128. Uterine hæmorrhage (nonpuerperal)		3			3	
133. Nonpuerperal diseases of the breast (cancer excepted)		1			1	
136. Other accidents of labor	1	11			8	4
143. Furuncle		6			6	
144. Acute abscess	1	67			63	5
145a. Trichophytosis (tineas and peladas)	26	183			200	9
145b. Scabies	11	48			57	2
145c. Other diseases of the skin and annexa	5	72			77	
146. Diseases of the bones (tuberculosis excepted)		4			4	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		3			1	2
149. Other diseases of the organs of locomotion		56			56	
150. Congenital malformations (stillbirths not included)	1	31			31	1
154. Senility		3			3	
160. Suicide by cutting or piercing instruments		1	1			
167. Burns (conflagration excepted)		7			7	
171. Traumatism by cutting or piercing instruments		31			30	1
185a. Dislocations		5			5	
185b. Sprains		32			32	
185c. Fractures (cause not specified)	1	6			7	
186. Other external violence		45			45	
187. Ill-defined organic disease	1	2			3	
189a. Cause of death not specified or ill-defined	11	1,342	1		1,302	50
Total	155	6,409	193	26	6,153	192

BILIBID PRISON—REPORT OF DEATHS.

Diseases.	Presidio.				Carcel.				Conditions.				
	Filipi- nos.		Chi- nese.		Filipi- nos.		Chi- nese.		Total.	Married.	Single.	Widowed.	Unknown.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.					
4. Malaria	1				1				2		2		
5. Smallpox					2				4	1	2	1	
14. Dysentery	3								3	2	1		
28. Tuberculosis of the lungs	97	4	1		21		2		125	54	48	23	
30. Tuberculous meningitis	1								1	1			
31. Abdominal tuberculosis	8				1		2		11	5	2	4	
34. Tuberculosis of other organs					1				1		1		
35. Disseminated tuberculosis	1								1			1	
64. Cerebral hæmorrhage, apoplexy					1				1	1			
68. Other forms of mental alienation	7								7	3	1	3	
79. Organic diseases of the heart	2								2	1	1		
91. Bronchopneumonia	2				1				3	2		1	
92. Pneumonia	23				11		1		35	20	14	1	
93. Pleurisy	1								1		1		
94. Pulmonary congestion, pulmonary apoplexy							1		1	1			
95. Gangrene of the lung	1								1	1			
108. Appendicitis and typhlitis	1								1	1			
115. Other diseases of the liver					1				1		1		
116. Diseases of the spleen	1								1	1			
119. Acute nephritis	1								1	1			
120. Bright's disease	2								2	2			
160. Suicide by cutting or piercing instru- ments	3		1		1		1		6	4	2		
186. Other external violence					10				10	8	1	1	
Total	157	4	2		51		7		221	109	77	35	

Died in Bilibid Hospital, 193; legally executed, 10; died in San Lazaro Hospital, 18; total, 221.

PRISON SANITATION.

BILIBID PRISON-LABORATORY EXAMINATION.

Specimen.	Number.
Blood	2,303
Blood (count)	156
Fæces	16,477
Sputum	4,289
Urine	8,870
Miscellaneous	142
Total	32,237
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